G1000® Integrated Flight Deck

Cockpit Reference Guide for the Beechcraft 300/B300 Series

GARMIN®

FLIGHT INSTRUMENTS
NAV/COM/TRANSPONDER/AUDIO PANEL
AUTOMATIC FLIGHT CONTROL SYSTEM
GPS NAVIGATION
FLIGHT PLANNING
PROCEDURES
HAZARD AVOIDANCE
ADDITIONAL FEATURES
ANNUNCIATIONS & ALERTS
APPENDIX
INDEX

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This manual reflects the operation of System Software version 0985.07 or later for the Beechcraft 300 and B300. Some differences in operation may be observed when comparing the information in this manual to earlier or later software versions.

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WARNING: *Navigation and terrain separation must NOT be predicated upon the use of the terrain avoidance feature. The terrain avoidance feature is NOT intended to be used as a primary reference for terrain avoidance and does not relieve the pilot from the responsibility of being aware of surroundings during flight. The terrain avoidance feature is only to be used as an aid for terrain avoidance. Terrain data is obtained from third party sources. Garmin is not able to independently verify the accuracy of the terrain data.*

WARNING: *The displayed minimum safe altitudes (MSAs) are only advisory in nature and should not be relied upon as the sole source of obstacle and terrain avoidance information. Always refer to current aeronautical charts for appropriate minimum clearance altitudes.*

WARNING: *The altitude calculated by G1000 GPS receivers is geometric height above Mean Sea Level and could vary significantly from the altitude displayed by pressure altimeters, such as the GDC 74B Air Data Computer, or other altimeters in the aircraft. GPS altitude should never be used for vertical navigation. Always use pressure altitude displayed by the G1000 PFD or other pressure altimeters in aircraft.*

WARNING: *Do not use outdated database information. Databases used in the G1000 system must be updated regularly in order to ensure that the information remains current. Pilots using any outdated database do so entirely at their own risk.*

WARNING: *Do not use basemap (land and water data) information for primary navigation. Basemap data is intended only to supplement other approved navigation data sources and should be considered as an aid to enhance situational awareness.*

WARNING: *Do not rely solely upon the display of traffic information for collision avoidance maneuvering. The traffic display does not provide collision avoidance resolution advisories and does not under any circumstances or conditions relieve the pilot's responsibility to see and avoid other aircraft.*

WARNING: *Do not rely solely upon the display of traffic information to accurately depict all of the traffic within range of the aircraft. Due to lack of equipment, poor signal reception, and/or inaccurate information from aircraft or ground stations, traffic may be present that is not represented on the display.*

WARNING: *Do not use data link weather information for maneuvering in, near or around areas of hazardous weather. Information contained within data link weather products may not accurately depict current weather conditions.*

WARNING: *Do not use the indicated data link weather product age to determine the age of the weather information shown by the data link weather product. Due to time delays inherent in gathering and processing weather data for data link transmission, the weather information shown by the data link weather product may be significantly older than the indicated weather product age.*

WARNING: *Do not rely on information from the lightning detection system display as the sole basis for hazardous weather avoidance. Range limitations and interference may cause the system to display inaccurate or incomplete information. Refer to the documentation from the lightning detection system manufacturer for detailed information about the system.*

WARNING: *The Garmin system, as installed in this aircraft, has a very high degree of functional integrity. However, the pilot must recognize that providing monitoring and/or self-test capability for all conceivable system failures is not practical.*

WARNING: *Lamp(s) inside this product may contain mercury (HG) and must be recycled or disposed of according to local, state, or federal laws. For more information, refer to our website at www.garmin.com/aboutGarmin/environment/disposal.jsp.*

WARNING: *The United States government operates the Global Positioning System and is solely responsible for its accuracy and maintenance. The GPS system is subject to changes which could affect the accuracy and performance of all GPS equipment. Portions of the Garmin G1000 utilize GPS as a precision electronic NAVigation AID (NAVAID). Therefore, as with all NAVAIDs, information presented by the G1000 can be misused or misinterpreted and, therefore, become unsafe.*

WARNING: *To reduce the risk of unsafe operation, carefully review and understand all aspects of the G1000 Pilot's Guide documentation and the G1000 Integrated Avionics System and GFC 700 AFCS in Hawker Beechcraft 300 and B300 King Air Airplane Flight Manual Supplement. Thoroughly practice basic operation prior to actual use. During flight operations, carefully compare indications from the G1000 to all available navigation sources, including the information from other NAVAIDs, visual sightings, charts, etc. For safety purposes, always resolve any discrepancies before continuing navigation.*

WARNING: *For safety reasons, G1000 operational procedures must be learned on the ground.*

WARNING: *Do not use the system to attempt to penetrate a thunderstorm. The illustrations in this guide are only examples. Both the FAA Advisory Circular, Subject: Thunderstorms, and the Aeronautical Information Manual (AIM) recommend avoiding any thunderstorm identified as severe of giving intense radar echo by at least 20 miles.*

WARNING: *Because of variation in the earth's magnetic field, operating the system within the following areas could result in loss of reliable attitude and heading indications (GRS 77 installations only). North of 72° North latitude at all longitudes. South of 70° South latitude at all longitudes. North of 65° North latitude between longitude 75° W and 120° W. (Northern Canada). North of 70° North latitude between longitude 70° W and 128° W. (Northern Canada). North of 70° North latitude between longitude 85° E and 114° E. (Northern Russia). South of 55° South latitude between longitude 120° E and 165° E. (Region south of Australia and New Zealand).*

WARNING: *Do not use GPS to navigate to any active waypoint identified as a 'NON WGS84 WPT' by a system message. 'NON WGS84 WPT' waypoints are derived from an unknown map reference datum that may be incompatible with the map reference datum used by GPS (known as WGS84) and may be positioned in error as displayed.*

CAUTION: *The PFD and MFD displays use a lens coated with a special anti-reflective coating that is very sensitive to skin oils, waxes, and abrasive cleaners. CLEANERS CONTAINING AMMONIA WILL HARM THE ANTI-REFLECTIVE COATING. It is very important to clean the lens using a clean, lint-free cloth and an eyeglass lens cleaner that is specified as safe for anti-reflective coatings.*

CAUTION: *The Garmin G1000 does not contain any user-serviceable parts. Repairs should only be made by an authorized Garmin service center. Unauthorized repairs or modifications could void both the warranty and the pilot's authority to operate this device under FAA/FCC regulations.*

NOTE: *All visual depictions contained within this document, including screen images of the G1000 panel and displays, are subject to change and may not reflect the most current G1000 system and aviation databases. Depictions of equipment may differ slightly from the actual equipment.*

NOTE: *This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.*

NOTE: *The data contained in the terrain and obstacle databases comes from government agencies. Garmin accurately processes and cross-validates the data, but cannot guarantee the accuracy and completeness of the data.*

NOTE: *This product, its packaging, and its components contain chemicals known to the State of California to cause cancer, birth defects, or reproductive harm. This notice is being provided in accordance with California's Proposition 65. If you have any questions or would like additional information, please refer to our web site at www.garmin.com/prop65.*

NOTE: *Interference from GPS repeaters operating inside nearby hangars can cause an intermittent loss of attitude and heading displays while the aircraft is on the ground. Moving the aircraft more than 100 yards away from the source of the interference should alleviate the condition.*

NOTE: *Use of polarized eyewear may cause the flight displays to appear dim or blank.*

NOTE: *When operating the G1000 in DG Free Mode (GRS 7800 installations only), the heading information used by some system components (e.g. GTS 8000, AFCS, and GWX) will be different from the heading displayed on the GDU by an amount equal to the difference between the current Magnetic Field Variation Database (MV DB) value, and the MV DB value when DG Free Mode was activated. Due to the convergence of isogonic lines, this condition is most noticeable at or near the North and South poles.*

NOTE: *System navigation utilities may not reliably calculate range and bearing information when the aircraft is operating north of 80° North latitude or south of 80° South latitude. This may result in the system displaying small gaps in racetrack holding pattern depictions (GRS 7800 installations only).*

NOTE: *The Terrain Awareness and Warning System (TAWS) may not operate reliably north of 89º North latitude and south of 89º South latitude. This is due to limitations present within the Terrain database and the system's ability to process the data representing the affected areas (GRS 7800 installations only).*

NOTE: *The purpose of this Cockpit Reference Guide is to provide the pilot a resource with which to find operating instructions on the major features of the G1000 system more easily. It is not intended to be a comprehensive operating guide. Complete operating procedures for the system are found in the G1000 Pilot's Guide for this aircraft.*

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Part Number	Change Summary
190-01344-00 Rev A	Initial release
Rev B	Removed reference to TCAS II pitch attitude cue.
190-01344-01	Added User Defined Holds Removed Reports Page Added temperature compensated altitude Added DG Mode Added Pilot Profiles Added GRS 7800, GTS 8000, GTX 3000, GRA 5500 Changed Garmin Flight Data Services to Garmin Connext™ Added other GDU 13.06 parameters

Revision	Date of Revision	Affected Pages	Description
A	November, 2013	All	Production release

Blank Page

FLIGHT INSTRUMENTS 1
- **Selecting the Altimeter Barometric Pressure Setting** 1
- **Selecting Standard Barometric Pressure (29.92 in Hg)** 1
- **Change Altimeter Barometric Pressure Setting Units** 1
- **Synchronizing the Altimeter Barometric Pressure Settings** 1
- **Synchronize CDI** 1
- **Selecting DG Mode (GRS 7800 Installations Only)** 2
- **Change Navigation Sources** 2
- **Enable/Disable OBS Mode While Navigating with GPS** 2
- **Generic Timer** 2
- **Configure Vspeed Bugs Individually** 3
- **Turn Vspeed Bugs On or Off by Category** 3
- **Set Barometric/Radar Altimeter Minimum Descent Altitude** 3
- **Testing the Radar Altimeter** 4
- **Displaying Wind Data** 4

NAV/COM/TRANSPONDER/AUDIO PANEL 5
- **ADF Tuning (Optional)** 5
- **DME Tuning** 5
- **Enter a Transponder Code** 5
- **Select Transponder Mode** 5
- **Selecting a COM Radio** 6
- **Selecting a NAV Radio** 6
- **NAV/COM Tuning** 6
- **Intercom** 7
- **Passenger Address (PA) System** 7
- **Clearance Recorder and Player** 7

AUTOMATIC FLIGHT CONTROL SYSTEM 9
- **Flight Director Activation** 9
- **Vertical Modes** 10
- **Lateral Modes** 11

GPS NAVIGATION 13
- **Direct-to Navigation** 13
- **Activate a Stored Flight Plan** 14
- **Activate a Flight Plan Leg** 14
- **Stop Navigating a Flight Plan** 15
- **Vertical Navigation (VNAV)** 15

FLIGHT PLANNING 17
- **Weight Planning** 17
- **Trip Planning** 17
- **Create a User Waypoint Defined by Latitude & Longitude** 19

Create a User Waypoint Defined by Radials from Other Waypoints 20
Create a User Waypoint Defined by a Radial & Distance from Another Waypoint .. 22
Delete a User Waypoint 23
Create a Flight Plan 24
Import a Flight Plan from an SD Card 25
Insert a Waypoint in the Active Flight Plan 25
Enter an Airway in a Flight Plan 26
Invert An Active Flight Plan 27
Creating a User-Defined Hold at an Active Flight Plan Waypoint 27
Creating a User-Defined Hold at the Aircraft Present Position 27
Creating a User-Defined Hold at a Direct-To Waypoint 28
Exiting a User-Defined Hold Inserted in the Active Flight Plan 28
Removing a User-Defined Hold Inserted in the Active Flight Plan 29
Removing a User-Defined Hold at an Off-route Direct-to 29
Invert An Active Flight Plan 29
Remove a Departure, Arrival, Approach, or Airway from a Flight Plan 29
Store a Flight Plan 30
Edit a Stored Flight Plan 30
Delete a Waypoint from the Flight Plan 30
Invert and Activate a Stored Flight Plan 31
Copy a Flight Plan 31
Delete a Flight Plan 32
Graphical Flight Plan Creation 32
Export a Flight Plan to an SD Card 32

PROCEDURES 33
Load and Activate a Departure Procedure 33
Activate A Departure Leg 33
Load An Arrival Procedure 33
Activate An Arrival Leg 34
Load and/or Activate an Approach Procedure 34
Activate An Approach in the Active Flight Plan 35
Activate a Vector to Final Approach Fix 36
Activate A Missed Approach in the Active Flight Plan 36
Temperature Compensated Altitude 36

HAZARD AVOIDANCE 39
Customizing the Hazard Displays on the Navigation Map 39
STORMSCOPE® (Optional) 39
SiriusXM Weather (Optional) 41
Garmin Connext™ Weather 43
Traffic Avoidance Systems 53
Terrain Awareness & Warning System 57
Airborne Color Weather Radar 60

ADDITIONAL FEATURES 65
- **Synthetic Vision** 65
- **Terminal Procedure Charts** 66
- **Airport Directory** 68
- **Satellite Telephone and Data Link Services** 69
- **WI-FI Connections** 82
- **SiriusXM Radio Entertainment** 85
- **Pilot Profiles** 87
- **Electronic Stability & Protection (ESP™)** 89

ANNUNCIATIONS & ALERTS 93
- **WARNING Annunciation** 93
- **ADVISORY Annunciations** 93
- **Message Advisory Alerts** 93
- **Comparator Annunciations** 94
- **Reversionary Sensor Annunciations** 94
- **AFCS Alerts** 95
- **TAWS-A Alerts** 96
- **TAWS-B Alerts** 99
- **Additional Voice Alerts** 102
- **MFD & PFD Message Advisories** 103
- **Database Message Advisories** 105
- **GMA 1347D Message Advisories** 108
- **GIA 63W Message Advisories** 109
- **GSD 41 Message Advisories (Optional)** 113
- **GEA 71 Message Advisories** 113
- **GTX 33/33D/33ES/3000 Message Advisories** 113
- **GRS 77/7800 Message Advisories** 114
- **GMU 44 Message Advisories** 116
- **GDL 59 Message Advisories** 116
- **GSR 56 Message Advisories** 117
- **GDL 69A Message Advisories** 117
- **GWX 68/70 Message Advisories** 117
- **GDC 74B/7400 Message Advisories** 118
- **GCU 477 Message Advisories** 118
- **GMC 710 Message Advisories** 119
- **GTS 800/820/825/850/855/8000 Message Advisories** 119
- **GRA 5500 Message Advisories** 120
- **Miscellaneous Message Advisories** 120
- **Flight Plan Import/Export Messages** 124

APPENDIX 127
PFD Softkey Map 127
MFD Navigation Page Softkey Map 137
Loading Updated Databases 138

INDEX Index-1

FLIGHT INSTRUMENTS

SELECTING THE ALTIMETER BAROMETRIC PRESSURE SETTING

Turn the **BARO** Knob to select the desired setting.

SELECTING STANDARD BAROMETRIC PRESSURE (29.92 IN HG)

Push the **BARO** Knob to select standard pressure.

CHANGE ALTIMETER BAROMETRIC PRESSURE SETTING UNITS

1) Press the **PFD** Softkey to display the second-level softkeys.
2) Press the **ALT UNIT** Softkey.
3) Press the **IN** Softkey to display the barometric pressure setting in inches of mercury (in Hg).

   Or:

   Press the **HPA** Softkey to display the barometric pressure setting in hectopascals.
4) Press the **BACK** Softkey to return to the top-level softkeys.

SYNCHRONIZING THE ALTIMETER BAROMETRIC PRESSURE SETTINGS

1) Select the AUX-SYSTEM SETUP Page on the MFD.
2) Press the **FMS** Knob to activate the cursor.
3) Turn the large **FMS** Knob to highlight BARO in SYNCHRONIZATION Window.
4) Turn the small **FMS** Knob clockwise to ON or counterclockwise to OFF.

SYNCHRONIZE CDI

1) Select the AUX-SYSTEM SETUP Page on the MFD.
2) Press the **FMS** Knob to activate the cursor.
3) Turn the large **FMS** Knob to highlight CDI in SYNCHRONIZATION Window.
4) Turn the small **FMS** Knob clockwise to ON or counterclockwise to OFF.

SELECTING DG MODE (GRS 7800 INSTALLATIONS ONLY)

1) Press the **PFD** Softkey.
2) Press the **HDG MODE** Softkey.
3) Press the **DG FREE** Softkey to activate DG mode. Press the **DG SLAVE** Softkey to deactivate DG mode.
   - Pressing the **HDG-** or **HDG+** Softkey to slew the counterclockwise or clockwise.
   - Pressing the **HDG SYNC** Softkey to sychronize the heading to the current selected heading.
   - Pressing the **TRACK SYNC** Softkey to synchronize the heading to the current track.

CHANGE NAVIGATION SOURCES

1) Press the **CDI** Softkey to change from GPS to VOR1 or LOC1. This changes the NAV1 standby frequency in the upper left corner of the PFD to light blue, indicating this is the frequency selected for tuning.
2) Press the **CDI** Softkey again to change from VOR1 or LOC1 to VOR2 or LOC2. This changes the NAV2 standby frequency in the upper left corner of the PFD to light blue, indicating this is the frequency selected for tuning.
3) Press the **CDI** Softkey a third time to return to GPS.

ENABLE/DISABLE OBS MODE WHILE NAVIGATING WITH GPS

1) Press the **OBS** Softkey to select OBS Mode.
2) Turn a **CRS** Knob to select the desired course to/from the waypoint. Press a **CRS** Knob to synchronize the Selected Course with the bearing to the next waypoint.
3) Press the **OBS** Softkey again to disable OBS Mode.

GENERIC TIMER

1) Press the **TMR/REF** Softkey, then turn the large **FMS** Knob to select the time field (hh/mm/ss). Turn the **FMS** Knobs to set the desired time, then press the **ENT** Key. The UP/DOWN field is now highlighted.

2) Turn the small **FMS** Knob to display the UP/DOWN window. Turn the **FMS** Knob to select 'UP' or 'DOWN', then press the **ENT** Key. 'START?' is now highlighted.

3) Press the **ENT** Key to START, STOP, or RESET the timer (if the timer is counting DOWN, it will start counting UP after reaching zero). Press the **CLR** Key or the **TMR/REF** Softkey to remove the window.

CONFIGURE VSPEED BUGS INDIVIDUALLY

1) Press the **TMR/REF** Softkey.
2) Turn the large **FMS** Knob to highlight the desired Vspeed.
3) Use the small **FMS** Knob to change the Vspeed in 1-kt increments (when a speed has been changed from a default value, an asterisk appears next to the speed).
4) Press the **ENT** Key or turn the large **FMS** Knob to highlight the ON/OFF field
5) Turn the small **FMS** Knob clockwise to ON or counterclockwise to OFF.
6) To remove the window, press the **CLR** Key or the **TMR/REF** Softkey.

TURN VSPEED BUGS ON OR OFF BY CATEGORY

1) Press the **TMR/REF** Softkey.
2) Press the **MENU** Key.
3) Turn the **FMS** Knob to highlight the desired option.
4) Press the **ENT** Key. Press the **TMR/REF** Softkey to remove the window.

SET BAROMETRIC/RADAR ALTIMETER MINIMUM DESCENT ALTITUDE

1) Press the **TMR/REF** Softkey.
2) Turn the large **FMS** Knob to highlight the OFF/BARO/RAD ALT field to the right of 'MINIMUMS'.
3) Turn the small **FMS** Knob clockwise to select BARO or RAD ALT.
4) Press the **ENT** Key.
5) Use the small **FMS** Knob to enter the desired altitude.
6) Press the **ENT** Key.
7) To remove the window, press the **CLR** Key or the **TMR/REF** Softkey.

TESTING THE RADAR ALTIMETER

1) Select the AUX-SYSTEM STATUS Page on the MFD.
2) Select the **RA TEST** Softkey. 'RA TEST' is displayed to the left of the Radar Altitude window. The Radar Altitude window displays 50 feet, indicating a properly functioning system.
3) Selecting the **RA TEST** Softkey again, or exiting the System Status Page cancels the test.

DISPLAYING WIND DATA

1) Press the **PFD** Softkey.
2) Press the **WIND** Softkey to display wind data below the Selected Heading.
3) Press one of the **OPTN** softkeys to change how wind data is displayed.
4) To remove the Wind Data Window, press the **OFF** Softkey.

NAV/COM/TRANSPONDER/AUDIO PANEL

ADF TUNING (OPTIONAL)

Tune the ADF using the remote ADF control head.

DME TUNING

1) Press the **DME** Softkey.
2) Turn the large **FMS** to select the DME source field.
3) Turn the small **FMS** Knob to select the desired Nav radio.
4) Press the **ENT** Key to complete the selection.

ENTER A TRANSPONDER CODE

1) Press the **XPDR** Softkey (**XPDR/TFC** if the TCAS II option is available).
2) If the aircraft is equipped with two transponders, press the **XPDR1** or **XPDR2** Softkey to select the active transponder. If these softkeys are not present, proceed to step 3.
3) Press the **CODE** Softkey to display the transponder code selection softkeys, for digit entry.
4) Press the digit softkeys to enter the code in the code field. When entering the code, the next key in sequence must be pressed within 10 seconds, or the entry is cancelled and restored to the previous code. Five seconds after the fourth digit has been entered, the transponder code becomes active.

SELECT TRANSPONDER MODE

With TCAS II Option

1) Press the **XPDR/TFC** Softkey.
2) Press the **MODE** Softkey to display the transponder mode selection softkeys.
3) Press the desired transponder mode softkey (**STBY**, **ON**, or **ALT**).

Without TCAS II Option

1) Press the **XPDR** Softkey.
2) If the aircraft is equipped with two transponders, press the **XPDR1** or **XPDR2** Softkey to select the active transponder.
3) Press the desired transponder mode softkey (**STBY**, **ON**, or **ALT**).

SELECTING A COM RADIO

Transmit/Receive

Press the **COM1 MIC**, **COM2 MIC**, or **COM3 MIC** Key (optional COM, if installed) on the audio panel.

Receive Only

Press the **COM1**, **COM2**, or **COM3** Key (optional COM, if installed) on the audio panel.

SELECTING A NAV RADIO

1) To begin navigating using a navigation radio, press the **CDI** Softkey on the PFD to select VOR1/LOC1 (NAV1) or VOR2/LOC2 (NAV2).
2) Press the **NAV1, NAV2, DME,** or **ADF** Key on the audio panel to select or deselect the navigation radio audio source. All radio keys can be selected individually or together.

NAV/COM TUNING

1) Press the small tuning knob to select the desired radio for tuning. A light blue box highlights the radio frequency to be tuned.
2) Turn the respective tuning knobs to enter the desired frequency into the standby frequency field. The large knob enters MHz and the small knob enters kHz.
3) Press the **Frequency Transfer** Key to place the frequency into the active frequency field.

INTERCOM

Pressing the **INTR COM** Key on either Audio Panel selects and deselects the intercom on both Audio Panels. The annunciator is lit when the intercom is active. The intercom connects the pilot and copilot together. Either the pilot or copilot may select or deselect the intercom.

The **CABIN** Key initiates two way communication between the pilot or copilot and the passengers in the cabin. The annunciator is lit when the cabin intercom is active on either Audio Panel.

The **MAN SQ** Key allows either automatic or manual control of the intercom squelch setting. Pressing the **MAN SQ** Key enables manual squelch control, indicated by the MAN SQ annunciator.

During manual squelch operation, pressing the **ICS** Knob switches between volume and squelch adjustment, lighting the associated annunciator beneath the knob. When the MAN SQ annunciator is lit, the **ICS** Knob controls both volume and squelch. When the MAN SQ annunciator is extinguished, the **ICS** Knob controls only volume.

PASSENGER ADDRESS (PA) SYSTEM

A passenger address system is provided by pressing the **PA** Key to deliver messages to the passengers. The message is heard by the other pilot on the headset only if the **PA** Key is enabled on both audio panels. PA messages are one way from the flight deck to the passengers.

CLEARANCE RECORDER AND PLAYER

NOTE: *Pressing the play key on the pilot's Audio Panel plays recorded audio to the Pilot. Pressing the play key on the Copilot's Audio Panel plays recorded audio to the Copilot.*

Recorded COM audio is stored in separate memory blocks. Once 2.5 minutes of recording time have been reached, the recorder begins recording over the stored memory blocks, starting from the oldest block.

The **PLAY** Key controls the play function. The PLAY annunciator is illuminated to indicate when play is in progress. The PLAY annunciator extinguishes after playback is finished.

Pressing the **PLAY** Key once plays the latest recorded memory block and then returns to normal operation. Pressing the **PLAY** Key again during play of a memory block stops play. If a COM input signal is detected during play of a recorded memory block, play is halted.

Pressing the **PLAY** Key twice within one-half second while audio is playing plays the previous block of recorded audio. Each subsequent two presses of the **PLAY** Key within one-half second backtracks through the recorded memory blocks to reach and play any recorded block.

AUTOMATIC FLIGHT CONTROL SYSTEM

NOTE: If sensor information (other than attitude) required for a flight director mode becomes invalid or unavailable, the flight director automatically reverts to the default mode for that axis.

NOTE: If the attitude information required for the default flight director modes becomes invalid or unavailable, the autopilot automatically disengages.

FLIGHT DIRECTOR ACTIVATION

An initial press of a key listed in the following table (when the flight director is not active) activates the pilot-side flight director in the listed modes.

Control Pressed	Modes Selected			
	Lateral		Vertical	
FD Key	Roll Hold (default)	ROL	Pitch Hold (default)	PIT
AP Key	Roll Hold (default)	ROL	Pitch Hold (default)	PIT
CWS Button	Roll Hold (default)	ROL	Pitch Hold (default)	PIT
GA Switch	Takeoff (on ground) Go Around (in air)	TO GA	Takeoff (on ground) Go Around (in air)	TO GA
ALT Key	Roll Hold (default)	ROL	Altitude Hold	ALT
VS Key	Roll Hold (default)	ROL	Vertical Speed	VS
VNV Key	Roll Hold (default)	ROL	Vertical Path Tracking*	VPTH
NAV Key	Navigation**	GPS VOR LOC	Pitch Hold (default)	PIT
BC Key	Backcourse***	BC	Pitch Hold (default)	PIT
APR Key	Approach**	GPS VAPP LOC	Pitch Hold (default) Glidepath Glideslope	PIT GP GS
HDG Key	Heading Select	HDG	Pitch Hold (default)	PIT

Valid VNV flight plan must be entered before **VNV Key press activates flight director.*

***The selected navigation receiver must have a valid VOR or LOC signal or active GPS course before **NAV** or **APR** Key press activates flight director.*

****The selected navigation receiver must have a valid LOC signal before **BC** Key press activates flight director.*

VERTICAL MODES

Vertical Mode	Description	Control	Annunciation
Pitch Hold	Holds the current aircraft pitch attitude; may be used to climb/descend to the Selected Altitude	(default)	PIT
Selected Altitude Armed	AFCS armed to capture the altitude displayed in the Selected Altitude window	*	ALTS
Altitude Hold	Holds the current Altitude Reference	**ALT** Key	ALT nnnnn FT
Vertical Speed	Maintains the current aircraft vertical speed; may be used to climb/descend to the Selected Altitude	**VS** Key	VS nnnn FPM
Flight Level Change, IAS Hold	Maintains the current aircraft airspeed (in IAS or Mach) while the aircraft is climbing/ descending to the Selected Altitude. Press the **SPD** Key to switch between IAS and MACH.	**FLC** Key	FLC nnn KT
Flight Level Change, Mach Hold			FLC M .nnn
VNAV	Captures and tracks the VNAV flight path	**VNV** Key	VPTH
VNAV Target Altitude Armed	AFCS armed to capture the altitude displayed in the VNAV Target Altitude window	**	ALTV
Glidepath	Captures and tracks the SBAS glidepath on approach	**APR** Key	GP
Glideslope	Captures and tracks the ILS glideslope on approach		GS
Takeoff (on ground)	Disengages the autopilot and commands a constant pitch angle and wings level in the air on the ground in preparation for takeoff	**GA** Switch	TO
Go Around (in air)	Disengages the autopilot and commands a constant pitch attitude and wings level in the air		GA
Level	Commands 0° pitch attitude	Activated only by the ESP function	LVL

* *ALTS armed automatically when PIT, VS, FLC, TO, or GA active, and under VPTH when Selected Altitude is to be captured instead of VNAV Target Altitude*

** *ALTV armed automatically under VPTH when VNAV Target Altitude is to be captured instead of Selected Altitude*

LATERAL MODES

Lateral Mode	Description	Control	Annunciation
Roll Hold	Holds current aircraft roll attitude or rolls wings level, depending on commanded bank angle	(default)	ROL
Low Bank	Limits maximum commanded roll angle	**BANK** Key	*
Heading Select	Captures and tracks Selected Heading	**HDG** Key	HDG
Navigation, GPS Arm/ Capture/Track	Captures and tracks selected navigation source (GPS, VOR, LOC)	**NAV** Key	GPS
Navigation, VOR Enroute Arm/Capture/Track			VOR
Navigation, LOC Arm/ Capture/Track (No Glideslope)			LOC
Backcourse Arm/Capture/ Track	Captures and tracks a localizer signal for backcourse approaches	**BC** Key	BC
Approach, GPS Arm/Capture/ Track	Captures and tracks selected navigation source (GPS, VOR, LOC)	**APR** Key	GPS
Approach, VOR Arm/Capture/ Track			VAPP
Approach, ILS Arm/Capture/ Track (Glideslope Mode automatically armed)			LOC
Takeoff (on ground)	Disengages autopilot and commands a constant pitch angle and wings level in preparation for takeoff	**GA** Switch	TO
Go Around (in air)	Disengages autopilot and commands a constant pitch angle and wings level in the air		GA
Level	Commands wings level attitude	Activated only by the ESP function	LVL

** No annunciation appears in the AFCS Status Box. The acceptable bank angle range is indicated in green along the Roll Scale of the Attitude Indicator.*

Blank Page

GPS NAVIGATION

DIRECT-TO NAVIGATION

Direct-to Navigation from the MFD

1) Press the **Direct-to** (D▸) Key on the Control Unit.
2) Enter the waypoint identifier.
3) Press the **ENT** Key to confirm the identifier. The 'Activate?' field is highlighted.
4) If no altitude constraint or course is desired, press the **ENT** Key to activate. To enter an altitude constraint, proceed to step 5.
5) Turn the large **FMS** Knob to place the cursor over the 'VNV' altitude field.
6) Enter the desired altitude.
7) Press the **ENT** Key. If the waypoint entered is an airport, the option to select MSL or AGL is now displayed. If the waypoint is not an airport, proceed to step 9.
8) Turn the small **FMS** Knob to select 'MSL' or 'AGL'.
9) Press the **ENT** Key. The cursor is now flashing in the VNV offset distance field.
10) Enter the desired offset distance before (-) or after (+) the waypoint.
11) Press the **ENT** Key. The 'Activate?' field is highlighted.
12) Press the **ENT** Key to activate.

Direct-to Navigation from the PFD

1) Press the **Direct-to** Key (D▸) on the PFD.
2) Turn the large **FMS** Knob to place the cursor in the desired selection field.
3) Turn the small **FMS** Knob to begin selecting the desired identifier, location, etc.
4) Press the **ENT** Key.
5) The cursor is now flashing on 'ACTIVATE?'. If no altitude constraint or course is desired, press the **ENT** Key to activate. To enter an altitude constraint, proceed to step 6.
6) Turn the large **FMS** Knob to place the cursor over the 'ALT' altitude field.

7) Turn the small **FMS** Knob to enter the desired altitude.

8) Press the **ENT** Key. If the waypoint entered is an airport, the option to select MSL or AGL is now displayed. If the waypoint is not an airport, proceed to step 10.

9) Turn the small **FMS** Knob to select 'MSL' or 'AGL'.

10) Press the **ENT** Key. The cursor is placed in the 'OFFSET' offset distance field.

11) Turn the small **FMS** Knob to enter the desired target altitude offset from the selected Direct-to.

12) Press the **ENT** Key to highlight 'Activate?' or turn the large **FMS** Knob to highlight the 'CRS' field.

13) Turn the small **FMS** Knob to enter the desired course to the waypoint.

14) Press the **ENT** Key to highlight 'ACTIVATE?'.

15) Press the **ENT** again to activate the Direct-to.

ACTIVATE A STORED FLIGHT PLAN

1) Press the **FPL** Key on the Control Unit and turn the small **FMS** Knob to display the Flight Plan Catalog Page.

2) Press the **FMS** Knob to activate the cursor.

3) Turn the large **FMS** Knob to highlight the desired flight plan

4) Select the **ACTIVE** Softkey. The confirmation window is now displayed.

5) With 'OK' highlighted, press the **ENT** Key to activate the flight plan. To cancel the flight plan activation, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.

ACTIVATE A FLIGHT PLAN LEG

1) From the Active Flight Plan Page, press the **FMS** Knob to activate the cursor and turn the large **FMS** Knob to highlight the desired waypoint.

2) Select the **ACT LEG** Softkey.

   OR

   Press the **MENU** Key, select the 'Activate Leg' option from the page menu and press the **ENT** Key. This step must be used when activating a leg from the PFD.

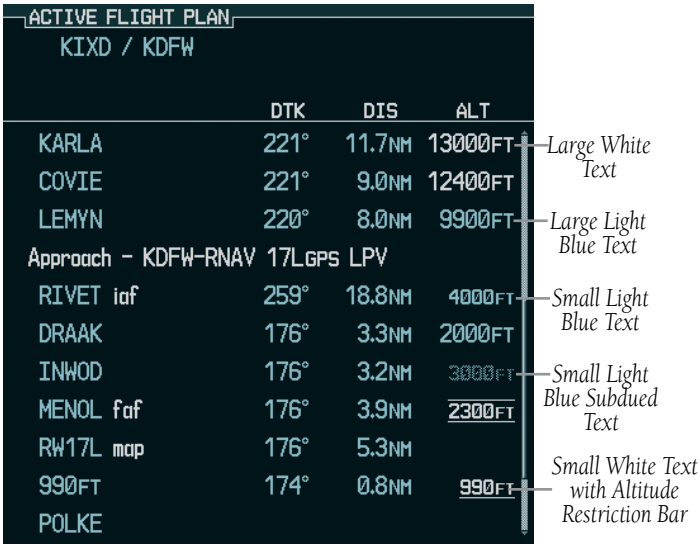
3) With 'Activate' highlighted, press the **ENT** Key.

STOP NAVIGATING A FLIGHT PLAN

1) Press the **FPL** Key on the Control Unit to display the Active Flight Plan Page.
2) Press the **MENU** Key to display the Page Menu Window.
3) Turn the large **FMS** Knob to highlight 'Delete Flight Plan' and press the **ENT** Key. With 'OK' highlighted, press the **ENT** Key to deactivate the flight plan. This will not delete the stored flight plan, only the active flight plan.

VERTICAL NAVIGATION (VNAV)

The navigation database only contains altitudes for procedures that call for "Cross at" altitudes. If the procedure states "Expect to cross at," the altitude is not in the database. In this case the altitude may be entered manually.


ACTIVE FLIGHT PLAN
KIXD / KDFW
DTK DIS ALT
KARLA 221° 11.7NM 13000FT
COVIE 221° 9.0NM 12400FT
LEMYN 220° 8.0NM 9900FT
Approach - KDFW-RNAV 17LGPS LPV
RIVET iaf 259° 18.8NM 4000FT
DRAAK 176° 3.3NM 2000FT
INWOD 176° 3.2NM 3000FT
MENOL faf 176° 3.9NM 2300FT
RW17L map 176° 5.3NM
990FT 174° 0.8NM 990FT
POLKE
Large White Text
Large Light Blue Text
Small Light Blue Text
Small Light Blue Subdued Text
Small White Text with Altitude Restriction Bar

Cross AT or ABOVE 5,000 ft

Cross AT 2,300 ft

Cross AT or BELOW 3,000 ft

Altitudes associated with arrival and approach procedures are "auto-designated". This means the system will automatically use the altitudes loaded with the arrival or approach for giving vertical flight path guidance outside the FAF. Note that these altitudes will be displayed as small light blue text.

Altitudes that have been designated for use in vertical navigation may also be made "non-designated" by placing the cursor over the desired altitude and pressing the **CLR** Key. The altitude is now displayed only as a reference. It will not be used to give flight path vertical guidance. Other displayed altitudes may change due to re-calculations or rendered invalid as a result of manually changing an altitude to a non-designated altitude.

	White Text	Light Blue Text	Light Blue Subdued Text
Large Text	Altitude calculated by the system estimating the altitude of the aircraft as it passes over the navigation point. This altitude is provided as a reference and is not designated to be used in determining vertical flight path guidance.	Altitude has been entered by the pilot. Altitude is designated for use in giving vertical flight path guidance. Altitude does not match the published altitude in navigation database or no published altitude exists.	The system cannot use this altitude in determining vertical flight path guidance.
Small Text	Altitude is not designated to be used in determining vertical flight path guidance. Altitude has been retrieved from the navigation database and is provided as a reference.	Altitude is designated for use in giving vertical flight path guidance. Altitude has been retrieved from the navigation database or has been entered by the pilot and matches a published altitude in the navigation database.	The system cannot use this altitude in determining vertical flight path guidance.

FLIGHT PLANNING

WEIGHT PLANNING

All procedures apply to the MFD and the Control Unit unless otherwise stated.

Entering Weight Parameters

The Weight Planning Page is displayed after system power-up. If it is necessary to return to this page, turn the large **FMS** Knob to select the 'AUX' page group. Turn the small **FMS** Knob to select the Weight Planning Pge.

1) Select the **EMPTY WT** Softkey to place the cursor in the Basic Empty Weight field.
2) Enter the desired aircraft empty weight.
3) Press the **ENT** Key. The cursor is now over the 'PILOT & STORES' field.
4) Enter the desired weight of Pilot & Stores.
5) Press the **ENT** Key.
6) Continue repeating these steps until all desired weights have been entered.

Entering Fuel Parameters

1) Press the **FMS** Knob to activate the cursor.
2) Turn the large **FMS** Knob to place the cursor in the 'FUEL ON BOARD' field.
3) Turn the small **FMS** Knob to enter the desired fuel quantity.
4) Press the **ENT** Key. The cursor is now in the 'FUEL RESERVES' field.
5) Turn the small **FMS** Knob to enter the desired reserve fuel quantity.
6) Press the **FMS** Knob to remove the cursor.
7) Press the **ENT** Key.

TRIP PLANNING

1) Turn the large **FMS** Knob on the Control Unit to select the 'AUX' page group.
2) Turn the small **FMS** Knob to select the Trip Planning Page.
3) The current 'PAGE MODE' is displayed at the top of the page: 'AUTOMATIC' or 'MANUAL'. To change the page mode, select the **AUTO** or **MANUAL** Softkey.

4) For Direct-to planning:

a) Select the **WPTS** Softkey and verify that the starting waypoint field indicates 'P.POS' (present position).

b) If necessary, press the **MENU** Key and select 'Set WPT to Present Position' to display 'P.POS'.

c) Press the **ENT** Key and the flashing cursor moves to the ending waypoint field.

d) Enter the identifier of the ending waypoint and press the **ENT** Key to accept the waypoint.

Or:

For point-to-point planning:

a) Enter the identifier of the starting waypoint.

b) Once the waypoint's identifier is entered, press the **ENT** Key to accept the waypoint. The flashing cursor moves to the ending waypoint.

c) Again, enter the identifier of the ending waypoint.

d) Press the **ENT** Key to accept the waypoint.

Or:

For flight plan leg planning:

a) Select the **FPL** Softkey (at the bottom of the display).

b) Turn the small **FMS** Knob to select the desired flight plan (already stored in memory), by number.

c) Turn the large **FMS** Knob to highlight the 'LEG' field.

d) Turn the small **FMS** Knob to select the desired leg of the flight plan, or select 'CUM' to apply trip planning calculations to the entire flight plan. Selecting 'FPL 00' will display the active flight plan. If an active flight plan is selected, 'REM' will be an available option to display planning data for the remainder of the flight plan.

NOTE: *The page mode must be set to 'MANUAL' to perform the following steps.*

5) Turn the large **FMS** Knob to highlight the departure time (DEP TIME) field.

NOTE: *The departure time on the Trip Planning Page is used for preflight planning. Refer to the Utility Page for the actual flight departure time.*

6) Enter the departure time. Press the **ENT** Key when finished. Departure time may be entered in local or UTC time, depending upon system settings.

7) The flashing cursor moves to the ground speed (GS) field. Enter the ground speed. Press the **ENT** Key when finished. Note that in 'automatic' page mode, ground speed is provided by the system.

8) The flashing cursor moves to the fuel flow field. Enter the fuel flow. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, fuel flow is provided by the system.

9) The flashing cursor moves to the fuel onboard field. Modify the fuel onboard. Press the **ENT** Key when finished. In 'AUTOMATIC' mode, fuel onboard is provided by the entry made on the Weight Planning Page.

10) The flashing cursor moves to the calibrated airspeed (CALIBRATED AS) field. Enter the calibrated airspeed. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, calibrated airspeed is provided by the system.

11) The flashing cursor moves to the altitude (IND ALTITUDE) field. Enter the altitude. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, altitude is provided by the system.

12) The flashing cursor moves to the barometric setting (PRESSURE) field. Enter the desired baro setting. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, the baro setting is provided by the setting entered on the PFD.

13) The flashing cursor moves to the air temperature (TOTAL AIR TEMP) field. Enter the desired air temperature. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, air temperature is provided by the system outside air temperature.

CREATE A USER WAYPOINT DEFINED BY LATITUDE & LONGITUDE

1) Turn the large **FMS** Knob on the Control Unit to select the 'WPT' page group.

2) Turn the small **FMS** Knob to select the User WPT Information Page.

3) Select the **NEW** Softkey. A waypoint is created at the current aircraft position.

4) Enter the desired waypoint name.

5) Press the **ENT** Key.

6) The cursor is now in the 'WAYPOINT TYPE' field. If desired, the waypoint can be made temporary (deleted automatically when the system is turned off). If the waypoint is to remain in the system, proceed to step 7.

a) Turn the large **FMS** Knob one click to the left to highlight 'TEMPORARY'.

b) Press the **ENT** Key to place a check-mark in the box. Turn the large **FMS** Knob to place the cursor back in the 'WAYPOINT TYPE' field.

7) With the cursor in the 'WAYPOINT TYPE' field, turn the small **FMS** Knob to display a list of waypoint types.

8) Turn the small **FMS** Knob to select LAT/LON (latitude and longitude).

9) Press the **ENT** Key.

CREATE A USER WAYPOINT DEFINED BY RADIALS FROM OTHER WAYPOINTS

1) Turn the large **FMS** Knob on the Control Unit to select the 'WPT' page group.

2) Turn the small **FMS** Knob to select the User WPT Information Page.

3) Select the **NEW** Softkey. A waypoint is created at the current aircraft position.

4) Enter the desired waypoint name.

5) Press the **ENT** Key.

6) The cursor is now in the 'WAYPOINT TYPE' field. If desired, the waypoint can be made temporary (deleted automatically when the system is turned off). If the waypoint is to remain in the system, proceed to step 7.

a) Turn the large **FMS** Knob one click to the left to highlight 'TEMPORARY'.

b) Press the **ENT** Key to place a check-mark in the box. Turn the large **FMS** Knob to place the cursor back in the 'WAYPOINT TYPE' field.

7) With the cursor in the 'WAYPOINT TYPE' field, turn the small **FMS** Knob to display a list of waypoint types.

8) Turn the small **FMS** Knob to select RAD/RAD (radial/radial).

9) Press the **ENT** Key.

10) The cursor moves to the 'REFERENCE WAYPOINTS' field. With the first waypoint name highlighted, use the **FMS** Knobs to enter the desired waypoint name. Waypoints may also be selected as follows:

a) When a flight plan is active, turning the small **FMS** Knob to the left will display a list of the flight plan waypoints.

b) Turn the large **FMS** Knob to select the desired waypoint.

c) Press the **ENT** Key.

Or:

a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

b) Turn the small **FMS** Knob to the right to display the 'NRST' airports to the aircraft's current position.

c) Turn the large **FMS** Knob to select the desired waypoint.

d) Press the **ENT** Key.

Or:

a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

b) Turn the small **FMS** Knob to the right to display the 'RECENT' waypoints.

c) Turn the large **FMS** Knob to select the desired waypoint.

d) Press the **ENT** Key.

Or:

a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

b) Turn the small **FMS** Knob to the right to display the 'USER' waypoints.

c) Turn the large **FMS** Knob to select the desired waypoint.

d) Press the **ENT** Key.

11) Press the **ENT** Key. The cursor is displayed in the 'RAD' (radial) field. Enter the desired radial from the reference waypoint.

12) Press the **ENT** Key.

13) Repeat step 10 to enter the next waypoint name.

14) Press the **ENT** Key. The cursor is displayed in the 'RAD' (radial) field for the second waypoint. Enter the desired radial from the reference waypoint.

15) Press the **ENT** Key.

16) Press the **FMS** Knob to remove the flashing cursor.

CREATE A USER WAYPOINT DEFINED BY A RADIAL & DISTANCE FROM ANOTHER WAYPOINT

1) Turn the large **FMS** Knob on the MFD Control Unit to select the 'WPT' page group.

2) Turn the small **FMS** Knob to select the User WPT Information Page.

3) Select the **NEW** Softkey. A waypoint is created at the current aircraft position.

4) Enter the desired waypoint name.

5) Press the **ENT** Key.

6) The cursor is now in the 'WAYPOINT TYPE' field. If desired, the waypoint can be made temporary (deleted automatically when the system is turned off). If the waypoint is to remain in the system, proceed to step 7.

- **a)** Turn the large **FMS** Knob one click to the left to highlight 'TEMPORARY'.
- **b)** Press the **ENT** Key to place a check-mark in the box. Turn the large **FMS** Knob to place the cursor back in the 'WAYPOINT TYPE' field.

7) With the cursor in the 'WAYPOINT TYPE' field, turn the small **FMS** Knob to display a list of waypoint types.

8) Turn the small **FMS** Knob to select RAD/DIS (radial/distance).

9) Press the **ENT** Key.

10) The cursor moves to the 'REFERENCE WAYPOINTS' field. With the first waypoint name highlighted, use the **FMS** Knobs to enter the desired waypoint name. Waypoints may also be selected as follows:

- **a)** When a flight plan is active, turning the small **FMS** Knob to the left will display a list of the flight plan waypoints.
- **b)** Turn the large **FMS** Knob to select the desired waypoint.
- **c)** Press the **ENT** Key.

Or:

- **a)** Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.
- **b)** Turn the small **FMS** Knob to the right to display the 'NRST' airports to the aircraft's current position.
- **c)** Turn the large **FMS** Knob to select the desired waypoint.
- **d)** Press the **ENT** Key.

Or:

a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

b) Turn the small **FMS** Knob to the right to display the 'RECENT' waypoints.

c) Turn the large **FMS** Knob to select the desired waypoint.

d) Press the **ENT** Key.

Or:

a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

b) Turn the small **FMS** Knob to the right to display the 'USER' waypoints.

c) Turn the large **FMS** Knob to select the desired waypoint.

d) Press the **ENT** Key.

11) Press the **ENT** Key. The cursor is displayed in the 'RAD' (radial) field. Enter the desired radial from the reference waypoint.

12) Press the **ENT** Key.

13) The cursor is now displayed in the 'DIS' (distance) field. Enter the desired distance from the reference waypoint.

14) Press the **ENT** Key.

15) Press the **FMS** Knob to remove the flashing cursor.

DELETE A USER WAYPOINT

1) Turn the large **FMS** Knob to select the 'WPT' page group.

2) Turn the small **FMS** Knob to select the User WPT Information Page.

3) Press the **FMS** Knob to activate the cursor.

4) Turn the large **FMS** Knob to the place the cursor in the 'USER WAYPOINT LIST' field.

5) Turn the small **FMS** Knob to highlight the desired waypoint.

6) Select the **DELETE** Softkey.

7) The message 'Would you like to delete the user waypoint?' is displayed. With 'YES' highlighted, press the **ENT** Key.

CREATE A FLIGHT PLAN

NOTE: *When creating a flight plan in the Active Flight Plan Window, the first leg is activated automatically after it is created.*

Creating an active flight plan:

1) Press the **FPL** Key.
2) Press the **FMS** Knob to activate the cursor (only on MFD).
3) Turn the small **FMS** Knob to display the Waypoint Information Window. (Turning it clockwise displays a blank Waypoint Information Window, turning it counter-clockwise displays the Waypoint Information Window with a waypoint selection submenu allowing selection of active flight plan, nearest, recent, user, or airway waypoints).
4) Enter the identifier, facility, or city name of the departure waypoint or select a waypoint from the submenu of waypoints and press the **ENT** Key. The active flight plan is modified as each waypoint is entered.
5) Repeat step numbers 3 and 4 to enter each additional flight plan waypoint.
6) When all waypoints have been entered, press the **FMS** Knob to remove the cursor.

Creating a stored flight plan:

1) Press the **FPL** Key.
2) Turn the small **FMS** Knob clockwise to display the Flight Plan Catalog Page.
3) Select the **NEW** Softkey; or press the **MENU** Key, highlight 'Create New Flight Plan', and press the **ENT** Key to display a blank flight plan for the first empty storage location.
4) Turn the small **FMS** Knob to display the Waypoint Information Window. (Turning it clockwise displays a blank Waypoint Information Window, turning it counter-clockwise displays the Waypoint Information Window with a waypoint selection submenu allowing selection of active flight plan, nearest, recent, user, or airway waypoints).
5) Enter the identifier, facility, or city name of the departure waypoint or select a waypoint from the submenu of waypoints and press the **ENT** Key.
6) Repeat step numbers 4 and 5 to enter each additional flight plan waypoint.
7) When all waypoints have been entered, press the **FMS** Knob to return to the Flight Plan Catalog Page. The new flight plan is now in the list.

IMPORT A FLIGHT PLAN FROM AN SD CARD

1) Insert the SD card containing the flight plan in the top card slot on the MFD.
2) Press the **FPL** Key on the Control Unit to display the Active Flight Plan Page on the MFD.
3) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
4) Press the **FMS** Knob to activate the cursor.
5) Turn either **FMS** Knob to highlight an empty or existing flight plan.
6) Select the **IMPORT** Softkey.

   If an empty flight plan is selected, a list of the available flight plans on the SD card will be displayed.

   Or:

   If an existing flight plan is selected, an 'Overwrite existing flight plan? OK or CANCEL' prompt is displayed. Press the **ENT** Key to choose to overwrite the selected flight plan and see a list of the available flight plans on the SD card. If overwriting the existing flight plan is not desired, select 'CANCEL' using the **FMS** Knob, press the **ENT** Key, select another existing or empty flight plan, and again select the **IMPORT** Softkey.
7) Turn the small **FMS** Knob to highlight the desired flight plan for importing.
8) Press the **ENT** Key.

INSERT A WAYPOINT IN THE ACTIVE FLIGHT PLAN

1) Press the **FPL** Key on the Control Unit to display the active flight plan.
2) Press the **FMS** Knob to activate the cursor.
3) Turn the large **FMS** Knob to highlight the desired flight plan waypoint. The new waypoint will be inserted before the highlighted waypoint.
4) Turn the small **FMS** Knob. The Waypoint Information Window is now displayed.
5) Enter the new flight plan waypoint by one of the following:
   a) Enter the user waypoint identifier, facility, or city.
   b) Press the **ENT** Key.

   Or:

a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

b) Turn the small **FMS** Knob to the right to display the 'NRST' airport waypoints to the aircraft's current position.

c) Turn the large **FMS** Knob to select the desired waypoint.

d) Press the **ENT** Key.

Or:

a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

b) Turn the small **FMS** Knob to the right to display the 'RECENT' waypoints.

c) Turn the large **FMS** Knob to select the desired waypoint.

d) Press the **ENT** Key.

ENTER AN AIRWAY IN A FLIGHT PLAN

1) Press the **FPL** Key on the Control Unit.

2) Press the **FMS** Knob to activate the cursor (not required on the PFD).

3) Turn the large **FMS** Knob to highlight the waypoint after the desired airway entry point. If this waypoint is not a valid airway entry point, a valid entry point should be entered at this time.

4) Turn the small **FMS** Knob one click clockwise and select the **LD AIRWY** Softkey, or press the **MENU** Key and select "Load Airway" (required on the PFD). The Select Airway Page is displayed. The **LD AIRWY** Softkey or the "Load Airway" menu item is available only when an acceptable airway entry waypoint has been chosen (the waypoint ahead of the cursor position).

5) Turn the **FMS** Knob to select the desired airway from the list, and press the **ENT** Key. Low altitude airways are shown first in the list, followed by "all" altitude airways, and then high altitude airways.

6) Turn the **FMS** Knob to select the desired airway exit point from the list, and press the **ENT** Key. 'LOAD?' is highlighted.

7) Press the **ENT** Key. The system returns to editing the flight plan with the new airway inserted.

INVERT AN ACTIVE FLIGHT PLAN

1) Press the **FPL** Key to display the active flight plan.
2) Press the **MENU** Key to display the Page Menu.
3) Turn the large **FMS** Knob to highlight 'Invert Flight Plan'.
4) Press the **ENT** Key. The original flight plan remains intact in its flight plan catalog storage location.
5) With 'OK' highlighted, press the **ENT** Key to invert the flight plan.

CREATING A USER-DEFINED HOLD AT AN ACTIVE FLIGHT PLAN WAYPOINT

1) Press the **FPL** Key to display the Active Flight Plan Page (MFD) or the Active Flight Plan Window (PFD).
2) Press the **FMS** Knob to activate the cursor (not required on the PFD) and turn the large **FMS** Knob to highlight the waypoint for the hold.
3) Press the **MENU** Key, highlight 'Hold At Wpt', and press the **ENT** Key. The HOLD AT window appears with the course field highlighted.
4) Use the **FMS** Knobs to edit the entry course, and press the **ENT** Key.
5) Use the small **FMS** Knob to select 'INBOUND' or 'OUTBOUND' course direction, and press the **ENT** Key.
6) Use the small **FMS** Knob to select 'TIME' or 'DIST' length mode, and press the **ENT** Key.
7) Use the **FMS** Knobs to edit the length, and press the **ENT** Key.
8) Use the small **FMS** Knob to select 'RIGHT' or 'LEFT' turn direction, and press the **ENT** Key.
9) Use the **FMS** Knobs to edit the Expect Further Clearance Time (EFC TIME), and press the **ENT** Key.
10) Press the **ENT** Key while 'LOAD?' is highlighted to add the hold into the flight plan.

CREATING A USER-DEFINED HOLD AT THE AIRCRAFT PRESENT POSITION

1) Press the **FPL** Key to display the Active Flight Plan Page (MFD) or the Active Flight Plan Window (PFD).
2) Press the **MENU** Key, highlight 'Hold At Present Position', and press the **ENT** Key. The HOLD AT window appears with the Length mode highlighted.

3) Use the small **FMS** Knob to select 'TIME' or 'DIST' length mode, and press the **ENT** Key.
4) Use the **FMS** Knobs to edit the length, and press the **ENT** Key.
5) Use the small **FMS** Knob to select 'RIGHT' or 'LEFT' turn direction, and press the **ENT** Key.
6) Use the **FMS** Knobs to edit the Expect Further Clearance Time (EFC TIME), and press the **ENT** Key.
7) Press the **ENT** Key while 'ACTIVATE?' is highlighted to immediately activate the hold.

CREATING A USER-DEFINED HOLD AT A DIRECT-TO WAYPOINT

1) Press a **Direct-to** Key on the Control Unit and set up the Direct To waypoint as desired, but select 'HOLD?' instead of 'ACTIVATE?' when finished.
2) Use the **FMS** Knobs to edit the entry course, and press the **ENT** Key.
5) Use the small **FMS** Knob to select 'INBOUND' or 'OUTBOUND' course direction, and press the **ENT** Key.
6) Use the small **FMS** Knob to select 'TIME' or 'DIST' length mode, and press the **ENT** Key.
7) Use the **FMS** Knobs to edit the length, and press the **ENT** Key.
8) Use the small **FMS** Knob to select 'RIGHT' or 'LEFT' turn direction, and press the **ENT** Key.
9) Use the **FMS** Knobs to edit the Expect Further Clearance Time (EFC TIME), and press the **ENT** Key.
10) Press the **ENT** Key while 'ACTIVATE?' is highlighted to activate the Direct To with the user-defined hold defined at the Direct To waypoint.

EXITING A USER-DEFINED HOLD INSERTED IN THE ACTIVE FLIGHT PLAN

Press the **SUSP** Softkey. The system will provide guidance to follow the holding pattern to the inbound course and resume automatic waypoint sequencing.

REMOVING A USER-DEFINED HOLD INSERTED IN THE ACTIVE FLIGHT PLAN

1) Press the **FPL** Key to display the Active Flight Plan Page (MFD) or the Active Flight Plan Window (PFD).
2) Press the **FMS** Knob to activate the cursor (not required on the PFD) and turn the large **FMS** Knob to highlight the HOLD waypoint.
3) Press the **CLR** Key. A 'Remove Holding Pattern?' confirmation window is displayed.
4) Select 'OK' and press the **ENT** Key. The holding pattern is removed from the active flight plan. Select 'CANCEL' and press the **ENT** Key to cancel the removal of the holding pattern.

REMOVING A USER-DEFINED HOLD AT AN OFF-ROUTE DIRECT-TO

1) Press a **Direct To** Key to display the DIRECT TO Window (PFD or MFD).
2) Press the **MENU** Key to display the PAGE MENU with the cursor on the 'Cancel Direct-To NAV' selection.
3) Press the **ENT** Key. The holding pattern is removed.

INVERT AN ACTIVE FLIGHT PLAN

1) Press the **FPL** Key to display the active flight plan.
2) Press the **MENU** Key to display the Page Menu.
3) Turn the large **FMS** Knob to highlight 'Invert Flight Plan'.
4) Press the **ENT** Key. The original flight plan remains intact in its flight plan catalog storage location.
5) With 'OK' highlighted, press the **ENT** Key to invert the flight plan.

REMOVE A DEPARTURE, ARRIVAL, APPROACH, OR AIRWAY FROM A FLIGHT PLAN

1) Press the **FPL** Key on the Control Unit to display the active flight plan. Press the **FMS** Knob to activate the cursor.

   Or:

a) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.

b) Press the **FMS** Knob to activate the cursor.

c) Turn the large **FMS** Knob to highlight the desired flight plan.

d) Select the **EDIT** Softkey.

2) Turn the large **FMS** Knob to highlight the title for the approach, departure, arrival, or airway to be deleted. Titles appear in white directly above the procedure's waypoints.

3) Press the **CLR** Key to display a confirmation window.

4) With 'OK' highlighted, press the **ENT** Key to remove the selected procedure or airway.

STORE A FLIGHT PLAN

1) After creating a flight plan on either the PFD or MFD, it may be saved by pressing the **MENU** Key.

2) Turn the large **FMS** Knob to highlight 'Store Flight Plan' and press the **ENT** Key.

3) With 'OK' highlighted, press the **ENT** Key to store the flight plan.

EDIT A STORED FLIGHT PLAN

1) Press the **FPL** Key on the Control Unit and turn the small **FMS** Knob to display the Flight Plan Catalog Page.

2) Press the **FMS** Knob to activate the cursor.

3) Turn the large **FMS** Knob to highlight the desired flight plan.

4) Select the **EDIT** Softkey.

5) Turn the large **FMS** Knob to place the cursor in the desired location.

6) Enter the changes, then press the **ENT** Key.

7) Press the **FMS** Knob to return to the Flight Plan Catalog Page.

DELETE A WAYPOINT FROM THE FLIGHT PLAN

1) Press the **FPL** Key to display the active flight plan. Press the **FMS** Knob to activate the cursor.

Or:

a) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
b) Press the **FMS** Knob to activate the cursor.
c) Turn the large **FMS** Knob to highlight the desired flight plan.
d) Select the **EDIT** Softkey.

2) Turn the large **FMS** Knob to highlight the waypoint to be deleted.
3) Press the **CLR** Key to display a 'REMOVE (Wpt Name)?' confirmation window.
4) With 'OK' highlighted, press the **ENT** Key to remove the waypoint. To cancel the delete request, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.
5) Once all changes have been made, press the **FMS** Knob to remove the cursor.

INVERT AND ACTIVATE A STORED FLIGHT PLAN

1) Press the **FPL** Key on the Control Unit.
2) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
3) Press the **FMS** Knob to activate the cursor.
4) Turn the large **FMS** Knob to highlight the desired flight plan.
5) Select the **INVERT** Softkey. 'Invert and activate stored flight plan?' will be displayed.
6) With 'OK' highlighted, press the **ENT** Key. The selected flight plan is now inverted and activated. The original flight plan remains intact in its flight plan catalog storage location.

COPY A FLIGHT PLAN

1) Press the **FPL** Key on the Control Unit.
2) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
3) Press the **FMS** Knob to activate the cursor.
4) Turn the large **FMS** Knob to highlight the flight plan to be copied.
5) Select the **COPY** Softkey. A 'Copy to flight plan #?' confirmation window is displayed.
6) With 'OK' highlighted, press the **ENT** Key to copy the flight plan. To cancel, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.

DELETE A FLIGHT PLAN

1) Press the **FPL** Key on the Control Unit.
2) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
3) Press the **FMS** Knob to activate the cursor.
4) Turn the large **FMS** Knob to highlight the flight plan to be deleted.
5) Select the **DELETE** Softkey. A 'Delete flight plan #?' confirmation window is displayed.
6) With 'OK' highlighted, press the **ENT** Key to delete the flight plan. To cancel, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.

GRAPHICAL FLIGHT PLAN CREATION

1) Press the **FPL** Key on the Control Unit to display the Active Flight Plan Page.
2) Press the **Joystick** to activate the map pointer. Use the **Joystick** to move the pointer to the desired point on the map to be inserted as a waypoint in the flight plan.
3) The default insertion point is at the end of the flight plan. If the selected waypoint is to be placed anywhere other than the end of the flight plan, press the **FMS** Knob to activate the cursor. Waypoints are inserted *ABOVE* the cursor. Turn the large **FMS** Knob to select the desired insertion point.
4) Select the **LD WPT** Softkey. The selected waypoint will be inserted at the selected point. The default user waypoint naming is USR000, USR001, USR002, and so on.
5) To change the user waypoint name, follow the procedure for modifying a user waypoint.

EXPORT A FLIGHT PLAN TO AN SD CARD

1) Insert the SD card into the top card slot on the MFD.
2) Press the **FPL** Key on the Contol Unit to display the Active Flight Plan Page on the MFD.
3) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
4) Press the **FMS** Knob to activate the cursor.
5) Turn the large **FMS** Knob to highlight the flight plan to be exported.
6) Select the **EXPORT** Softkey.
7) Press the **ENT** Key to confirm the export.

PROCEDURES

LOAD AND ACTIVATE A DEPARTURE PROCEDURE

1) Press the **PROC** Key.
2) Turn the large **FMS** Knob to highlight 'SELECT DEPARTURE'.
3) Press the **ENT** Key. The cursor is displayed in the 'DEPARTURE' field with a list of available departures.
4) Turn the large **FMS** Knob to highlight the desired departure.
5) Press the **ENT** Key. A list of runways may be displayed for the departure. If so, turn either **FMS** Knob to select the desired runway.
6) Press the **ENT** Key. The cursor is displayed in the 'TRANSITION' field with a list of available transitions.
7) Turn the large **FMS** Knob to highlight the desired transition.
8) Press the **ENT** Key.
9) With 'LOAD?' highlighted, press the **ENT** Key. The departure will be active when the flight plan is active.

ACTIVATE A DEPARTURE LEG

1) Press the **FPL** Key to display the active flight plan.
2) Press the **FMS** Knob to activate the cursor.
3) Turn the large **FMS** Knob to highlight the TO waypoint of the desired leg within the departure.
4) Select the **ACT LEG** Softkey. A confirmation window showing the selected leg will be displayed.
5) With 'ACTIVATE' highlighted, press the **ENT** Key.

LOAD AN ARRIVAL PROCEDURE

1) Press the **PROC** Key.
2) Turn the large **FMS** Knob to highlight 'SELECT ARRIVAL'.
3) Press the **ENT** Key. The cursor is displayed in the 'ARRIVAL' field with a list of available arrivals.

4) Turn the large **FMS** Knob to highlight the desired arrival.
5) Press the **ENT** Key. A list of transitions is displayed for the selected arrival.
6) Turn either **FMS** Knob to select the desired transition.
7) Press the **ENT** Key. A list of runways is displayed for the selected arrival.
8) Turn the large **FMS** Knob to highlight the desired runway.
9) Press the **ENT** Key.
10) With 'LOAD?' highlighted, press the **ENT** Key.
11) The arrival will become part of the active flight plan.

ACTIVATE AN ARRIVAL LEG

1) Press the **FPL** Key on the Control Unit to display the active flight plan.
2) Press the **FMS** Knob to activate the cursor.
3) Turn the large **FMS** Knob to highlight the TO waypoint of the desired leg within the arrival.
4) Select the **ACT LEG** Softkey. A confirmation window showing the selected leg is displayed.
5) With 'ACTIVATE' highlighted, press the **ENT** Key.

LOAD AND/OR ACTIVATE AN APPROACH PROCEDURE

NOTE: *If certain GPS parameters (SBAS, RAIM, etc.) are not available, some published approach procedures for the desired airport may not be displayed in the list of available approaches.*

1) Press the **PROC** Key.
2) Turn the large **FMS** Knob to highlight 'SELECT APPROACH'.
3) Press the **ENT** Key. A list of available approaches for the destination airport is displayed.
4) Turn either **FMS** Knob to highlight the desired approach.
5) Press the **ENT** Key. A list of available transitions for the selected approach procedure is now displayed.

6) Turn either **FMS** Knob to select the desired transition. The "Vectors" option assumes vectors will be received to the final course segment of the approach and will provide navigation guidance relative to the final approach course.

7) Press the **ENT** Key. The cursor moves to the MINIMUMS field.

8) If desired, the DA/MDA for the selected approach procedure may be entered and displayed on the PFD. Turn the small **FMS** Knob in the direction of the green arrow to change the display from OFF to BARO, optional RAD ALT, or TEMP COMP.

9) Press the **ENT** Key. The cursor moves to the altitude field. Turn the small **FMS** Knob to enter the published DA/MDA for the selected approach procedure.

10) Press the **ENT** Key. If BARO, RAD ALT, or OFF was selected step 8, proceed to step 11. If TEMP COMP was selected in step 8, the cursor moves to the 'TEMP AT...." field. Turn the small **FMS** Knob to enter the temperature at the destination airport. The temperature compensated altitude minimum is displayed below the previously enter minimum altitude value.

11) Press the **ENT** Key. 'LOAD? or ACTIVATE?' is now displayed with 'LOAD?' highlighted.

12) Turn the large **FMS** Knob to select either 'LOAD?' or 'ACTIVATE?'.

    Selecting 'LOAD?' enters the selected approach procedure into the active flight plan, but is not currently active. Selecting 'ACTIVATE?' enters the selected approach procedure into the active flight plan and activates the first leg of the approach.

13) Press the **ENT** Key.

ACTIVATE AN APPROACH IN THE ACTIVE FLIGHT PLAN

1) Press the **PROC** Key.

2) Turn the large **FMS** Knob to highlight 'ACTIVATE APPROACH'.

3) Press the **ENT** Key.

ACTIVATE A VECTOR TO FINAL APPROACH FIX

1) Press the **PROC** Key.
2) Turn the large **FMS** Knob to highlight 'ACTIVATE VECTOR-TO-FINAL'.
3) Press the **ENT** Key.
4) The final approach course becomes the active leg.

ACTIVATE A MISSED APPROACH IN THE ACTIVE FLIGHT PLAN

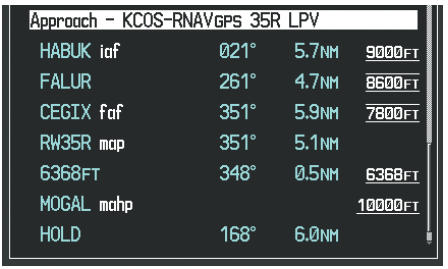
1) Press the **PROC** Key.
2) Turn the large **FMS** Knob to highlight 'ACTIVATE MISSED APPROACH'.
3) Press the **ENT** Key. A confirmation window will be displayed.
4) With 'ACTIVATE' highlighted, press the **ENT** Key.

   Or:

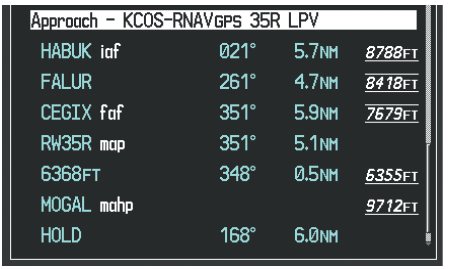
   Press the go-around button.
5) After activating the missed approach procedure, and the CDI has changed to TERM mode sensitivity, another approach procedure may be loaded.

TEMPERATURE COMPENSATED ALTITUDE

When temperature compensated altitude is enabled for the loaded approach, the altitudes associated with the approach waypoints are displayed in slanted text.


Approach - KCOS-RNAVGPS 35R LPV
HABUK iaf 021° 5.7NM 9000FT
FALUR 261° 4.7NM 8600FT
CEGIX faf 351° 5.9NM 7800FT
RW35R map 351° 5.1NM
6368FT 348° 0.5NM 6368FT
MOGAL mahp 10000FT
HOLD 168° 6.0NM

Altitudes Displayed Without Temperature Compensation


Approach - KCOS-RNAVGPS 35R LPV
HABUK iaf 021° 5.7NM 8788FT
FALUR 261° 4.7NM 8418FT
CEGIX faf 351° 5.9NM 7679FT
RW35R map 351° 5.1NM
6368FT 348° 0.5NM 6355FT
MOGAL mahp 9712FT
HOLD 168° 6.0NM

Altitudes Displayed With Temperature Compensation

Enable Temperature Compensated Altitude

1) From the Active Flight Plan Page, press the **MENU** Key. The Page Menu is displayed.
2) Turn the **FMS** Knob to highlight 'Temperature Compensation'.
3) Press the **ENT** Key. The TEMPERATURE COMPENSATION Window is displayed.
4) Use the small **FMS** Knob to select the temperature at the <airport>. The compensated altitude is computed as the temperature is selected.
5) Press the **ENT** Key. 'ACTIVATE COMPENSATION?' is highlighted.
6) Press the **ENT** Key. The compensated altitudes for the approach are shown in the flight plan.

Disable Temperature Compensated Altitude

1) From the Active Flight Plan Page, press the **MENU** Key. The Page Menu is displayed.
2) Turn the **FMS** Knob to highlight 'Temperature Compensation'.
3) Press the **ENT** Key. The TEMPERATURE COMPENSATION Window is displayed.
4) Press the **ENT** Key. 'CANCEL COMPENSATION?' is highlighted.
5) Press the **ENT** Key. The temperature compensated altitude at the FAF is cancelled.

Blank Page

HAZARD AVOIDANCE

CUSTOMIZING THE HAZARD DISPLAYS ON THE NAVIGATION MAP

1) With the Navigation Map Page displayed, press the **MENU** Key to display the Navigation Map Page Menu. The cursor flashes on the 'Map Setup' option.
2) Press the **ENT** Key. The Map Setup Menu is displayed. Turn the small **FMS** Knob to select 'Weather' to customize the display of weather features. Select 'Traffic' to customize the display of traffic.
3) Press the small **FMS** Knob to return to the Navigation Map Page.

STORMSCOPE® (OPTIONAL)

WARNING: *The Stormscope system is not intended to be used for hazardous thunderstorm penetration. Weather information on the G1000 MFD is approved for weather avoidance only. Refer to the WX-500 Pilot's Guide for detailed operation.*

Displaying Stormscope Lightning Data on the Navigation Map Page

1) Select the **MAP** Softkey.
2) Select the **STRMSCP** Softkey. Select the **STRMSCP** Softkey again to remove Stormscope Lightning Data from the Navigation Map Page.

Lightning Age	Symbol
Strike is less than 6 seconds old	
Strike is between 6 and 60 seconds old	
Strike is between 1 and 2 minutes old	
Strike is between 2 and 3 minutes old	

Select 'Cell' or 'Strike' as the Stormscope Lightning Mode

1) Press the **MENU** Key (with the Navigation Map Page displayed).
2) Turn either **FMS** Knob to highlight 'Map Setup'.
3) Press the **ENT** Key.
4) Turn the small **FMS** Knob to highlight 'Weather'.

5) Press the **ENT** Key.
6) Turn the large **FMS** Knob to place the cursor in the 'STRMSCP MODE' field.
7) Turn the small **FMS** Knob to display the 'Cell/Strike' window.
8) Turn either **FMS** Knob to select 'Cell' or 'Strike'. Press the **ENT** Key.
9) Push the **FMS** Knob to return to the Navigation Map Page.

Clear Stormscope Lightning Data from the Navigation Map Page

1) Press the **MENU** Key (with the Navigation Map Page displayed).
2) Turn either **FMS** Knob to highlight the 'Clear Stormscope® Lightning' field and press the **ENT** Key.

NOTE: *If heading input is lost, strikes and/or cells must be cleared manually after the execution of each turn. This is to ensure that the strike and/or cell positions are depicted accurately in relation to the nose of the aircraft.*

Stormscope Page

1) Turn the large **FMS** Knob until the Map Page group is selected.
2) Turn the small **FMS** Knob select the Stormscope Page.

Change the Stormscope Lightning Mode Between 'Cell' and 'Strike'

1) Select the Stormscope Page.
2) Select the **MODE** Softkey. The **CELL** and **STRIKE** Softkeys are displayed. Select the **CELL** Softkey to display 'CELL' data or select the **STRIKE** Softkey to display 'STRIKE' data. 'CELL' or 'STRIKE' is displayed in the mode box located in the upper left corner of the Stormscope Page.

NOTE: *"Cell mode" uses a clustering program to identify clusters of electrical activity that indicate cells.*

Change the Viewing Mode Between 360˚ and 120˚

1) Select the Stormscope Page.
2) Select the **VIEW** Softkey. The **360** and **ARC** Softkeys are displayed. Select the **360** Softkey to display a 360˚ viewing area or select the **ARC** Softkey to display a 120˚ viewing area.

   Select the **CLEAR** Softkey to remove all Stormscope lightning data from the display.

SIRIUSXM WEATHER (OPTIONAL)

WARNING: *Do not use data link weather information for maneuvering in, near, or around areas of hazardous weather. Information contained within data link weather products may not accurately depict current weather conditions.*

Displaying SiriusXM Weather on the Navigation Map Page

1) Select the **MAP** Softkey.
2) Select the **NEXRAD** or **XM LTNG** Softkey to display the desired weather. Select the applicable softkey again to remove weather data from the Navigation Map Page.

Display METAR and TAF information on the Airport Information Page

1) Turn the large **FMS** Knob to select the WPT Page Group.
2) Turn the small **FMS** Knob to select the Airport Information Page.
3) Select the **WX** Softkey to display METAR and TAF text (METAR and TAF information is updated every 12 minutes).

Displaying Weather on the Weather Data Link Page

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the Weather Data Link Page.
3) Select the available softkeys to select the desired SiriusXM Weather product.
4) Select the **LEGEND** Softkey to view the legends for the selected products. If necessary, turn either **FMS** Knob to scroll through the list. Press the small **FMS** Knob or the **ENT** Key to return to the map.

Map Panning Information – Weather Data Link Page

1) Push in the **Joystick** to display the panning arrow.
2) Move the **Joystick** to place the panning arrow on AIRMETs, TFRs, METARs, SIGMETs, PIREPs or AIREPs.
3) Press the **ENT** Key to display pertinent information for the selected product.

   Note that pressing the **ENT** Key when panning over an AIRMET or a SIGMET displays an information box that shows the text of the report.

Panning over an airport with METAR information does not display more information but allows the user to press the **ENT** Key and select that Airport's Information Page to display the text of the report. Pressing the **ENT** Key when panning over a TFR displays TFR specific information.

Weather Products and Symbols

Wx Product Status Icons	Description
	NEXRAD - Available for the US and Canada. The age of the displayed data for each is shown at the right.
	ECHO TOP - The age of the displayed data is shown at the right. Not displayed when CLOUD TOP is displayed.
	CLOUD TOP - The age of the displayed data is shown at the right. Not displayed when ECHO TOP is displayed.
	XM LIGHTNING - The age of the displayed data is shown at the right.
	CELL MOVEMENT - The age of the displayed data is shown at the right.
	SIGMET & AIRMET - The age of the displayed data for each is shown at the right.
	METAR - Available for the US and Canada. The age of the displayed data for each is shown at the right.
	SURFACE ANALYSIS with CITY FORECAST - The upper symbol depicts Surface Analysis. The lower symbol depicts City Forecast. The age of the displayed data for each is shown at the right. The selected forecast period is shown at the bottom.
	FREEZING LEVEL - The age of the displayed data is shown at the right.
	WINDS ALOFT - Available for the US and Canada. The age of the displayed data for each is shown at the right. The altitude selection is shown at the bottom.
	COUNTY WARNING - The age of the displayed data is shown at the right.

Wx Product Status Icons	Description
	CYCLONE WARNING - The age of the displayed data is shown at the right.
	AIREP - The age of the displayed data is shown at the right.
	PIREP - The age of the displayed data is shown at the right. Urgent Pireps are displayed in yellow.
	TURBULENCE - The age of the displayed data is shown at the right. The altitude selection is shown at the bottom.
	ICING POTENTIAL - The age of the displayed data is shown at the right. The altitude selection is shown at the bottom.

GARMIN CONNEXT™ WEATHER

WARNING: *Do not use data link weather information for maneuvering in, near, or around areas of hazardous weather. Information contained within data link weather products may not accurately depict current weather conditions.*

Weather data are provided when the pilot initiates either a manual or automatic Garmin Connext™ data request on the Connext Weather Data Link Page on the MFD. No weather data is displayed until the first Garmin Connext Weather Data Request is made.

Accessing Garmin Connext Weather Products

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the Connext Weather Data Link Page.

When a weather product is selected for display on the Connext Weather Data Link Page, a box containing a symbol for the product and its age (in minutes) are shown in the upper right. If weather data has not been requested, 'N/A' is shown next to the product symbol instead of age. The age of the weather product is based on the time difference between when the data was assembled on the ground and the current GPS time. Weather products are updated continuously or refreshed at specific intervals (defined in the **Refresh Rate** column in the following table).

If for any reason, a weather product is not refreshed within the defined **Expiration Time** intervals, the data is considered expired and is removed from the display. The age of the expired product is replaced by dashes. If more than half of the expiration time has elapsed, the color of the product age readout changes to yellow.

The refresh rate represents the interval at which the Garmin Connext servers make available the most current known weather data. It does not necessarily represent the rate at which new content is received from weather sources.

Weather Product	Symbol	Expiration Time (Minutes)	Refresh Rate (Minutes)
Radar Precipitation (PRECIP)		30	U.S./Canada: 3* Europe: 15
Infrared Satellite (IR SAT)		60	30
Datalink Lightning (DL LTNG)		30	Continuous
SIGMETs/AIRMETs (SIG/AIR)		60	Continuous
Meteorological Aerodrome Report (METARs)		90	Continuous
Winds Aloft (WIND)		60	Continuous
Pilot Weather Report (PIREPs)		90	Continuous
Temporary Flight Restrictions (TFRs)	no product image	60	Continuous
Terminal Aerodrome Reports (TAFs)	no product image	60	Continuous

** The composite precipitation image is updated every 3 minutes, but individual radar sites may take between 3 and 10 minutes to provide new data.*

Setting Up and Customizing the Connext Weather Data Link Page

1) Select the Connext Weather Data Link Page.
2) Press the **MENU** Key.
3) With 'Weather Setup' highlighted, press the **ENT** Key.
4) Turn the small **FMS** Knob to select 'Product Group 1' or 'Product Group 2', and press the **ENT** Key.
5) Turn the large **FMS** Knob or press the **ENT** Key to scroll through product selections.
6) Turn the small **FMS** Knob to scroll through options for each product (ON/OFF, range settings, etc.).
7) Press the **ENT** Key to select an option.
8) Press the **FMS** Knob or **CLR** Key to return to the Connext Weather Data Link Page with the changed settings.

On aircraft equipped with both Garmin Connext and SiriusXM Weather services, customizing the display settings for the corresponding weather products shown in following table will result in identical settings for both services.

SiriusXM Weather Product	Garmin Connext Weather Product
Next-generation Radar (NEXRAD)	Precipitation (PRECIP)
Cloud Top (CLD TOP)	Infrared Satellite (IR SAT)
SiriusXM Lightning (XM LTNG)	Connext Lightning (DL LTNG)
SIGMETs/AIRMETs (SIG/AIR)	SIGMETs/AIRMETs (SIG/AIR)
Meteorological Aerodrome Report (METARs)	Meteorological Aerodrome Report (METARs)
Winds Aloft (WIND)	Winds Aloft (WIND)
Pilot Weather Report (PIREPs)	Pilot Weather Report (PIREPs)

Restoring Default Connext Weather Data Link Page Settings

1) Select the Connext Weather Data Link Page.
2) Press the **MENU** Key.
3) With 'Weather Setup' highlighted, press the **ENT** Key.
4) Press the **MENU** Key.
5) Highlight the desired default(s) to restore (all or for selection) and press **ENT** Key.

Switching Between Garmin Connext and SiriusXM Weather Sources

1) Turn the large **FMS** Knob on the MFD to select the MAP page group.
2) Turn the small **FMS** Knob to select the Connext (or XM) Weather Data Link Page.
3) Press the **MENU** Key.
4) Turn the large **FMS** Knob to select 'Display Connext Weather' or 'Display XM Weather' (choice dependent on current weather source) and press the **ENT** Key.

Viewing Legends for Displayed Connext Weather Products

1) Select the Connext Weather Data Link Page.
2) Select the **LEGEND** Softkey to display the legends for the displayed weather products.

   Or:

   a) Press the **MENU** Key.

   b) Select 'Weather Legend' and press the **ENT** Key.
3) Turn the **FMS** Knob to scroll through the legends if more are available than fit in the window.
4) To remove the Legend Window, select the **LEGEND** Softkey, the **ENT** or the **CLR** Key, or press the **FMS** Knob.

Setting Up and Customizing Weather Data for the Navigation Map Page

1) Select the Navigation Map Page.
2) Press the **MENU** Key.

3) With 'Map Setup' highlighted, press the **ENT** Key.
4) Turn the small **FMS** Knob to select the 'Weather' Group and press the **ENT** Key.
5) Turn the large **FMS** Knob or press the **ENT** Key to scroll through product selections.
6) Turn the small **FMS** Knob to scroll through options for each product (ON/OFF, range settings).
7) Press the **ENT** Key to select an option.
8) Press the **FMS** Knob or **CLR** Key to return to the Navigation Map Page with the changed settings.

Connext Weather Data Requests

The Connext Data Request window provides the flight crew with the options to define the requested weather coverage area(s), choose automatic weather update intervals (if desired), and the ability to send or cancel weather data requests. The window also displays the status of the Connext data request process.

Requesting Connext Weather Data Manually

1) Select the Connext Weather Data Link Page.
2) Press the **MENU** Key.
3) With 'Connext Weather Request' highlighted, press the **ENT** Key.
4) Turn the large **FMS** Knob to highlight the desired coverage option(s) and press the **ENT** Key to check or uncheck one of more of the following coverage selections:
   - PRESENT POSITION – Requests data based on current location.
   - DESTINATION – Requests data based on active flight plan destination (if the flight plan contains no destination, dashes '------" are displayed.)
   - FPL – Requests data based on active flight plan. Turn the small **FMS** Knob to select the desired flight plan look-ahead distance option (or choose 'REMAINING FPL' to request the remainder of the flight plan).
   - WAYPOINT – Requests data based on any valid waypoint.

5) Turn the large **FMS** Knob highlight to the 'DIAMETER / RTE WIDTH' distance field and turn the small **FMS** Knob to select the desired diameter and route width of the request, then press the **ENT** Key.

6) Turn the large **FMS** Knob until the 'SEND REQ' button is highlighted. Press the **ENT** Key to initiate the request immediately or press the **FMS** Knob to return to the Connext Data Link Page without requesting data.

During a Connext Data Request, the Request Status box displays "Processing..." and the 'CANCEL REQ' button is highlighted. If desired, the Connext Data Request window may be closed while the data request is processing by pressing the **FMS** Knob; the data request will continue in the background. Connext Data Requests typically take between 1 to 3 minutes to complete depending on the size of the selected weather coverage area.

The G1000 retrieves all available Connext Weather products within the selected coverage area during an initial Connext Data Request, regardless of which products (if any) are currently enabled for display. On subsequent requests, previously retrieved textual data (such as METARs and TAFS) is retained if it has not expired, while new textual weather data matching the current coverage area and all graphical weather data is downloaded during every data request.

Cancelling a Connext Weather Data Request in Progress

1) Select the Connext Weather Data Link Page.
2) Press the **MENU** Key.
3) With 'Connext Data Request' highlighted, press the **ENT** Key.
4) Turn the large **FMS** Knob to select 'CANCEL REQ' and press the **ENT** Key. The request status box indicates 'Request Cancelled'.
5) Press the **FMS** Knob to return to the Connext Weather Datalink Page.

Enabling Automatic Connext Data Requests

1) Select the Connext Weather Data Link Page.
2) Press the **MENU** Key.
3) With 'Connext Weather Request' highlighted, press the **ENT** Key.
4) Choose the desired weather coverage options.
5) Turn the large **FMS** Knob to select the 'UPDATE RATE' setting. Then turn the small **FMS** Knob to highlight the desired automatic update frequency (OFF, 5 Min, 10 Min, 15 Min, 20 Min, 25 Min, 30 Min, 45 Min, or 60 Min), then press the **ENT** Key.

6) The 'SEND REQ" button is highlighted and a countdown timer is displayed in the 'REQUEST STATUS' based on the currently selected update rate. Press the **ENT** Key to immediately send an immediate Connext Data Request.

Or:

Press the **FMS** Knob to return to the Connext Weather Data Link Page.

Garmin Connext™ Weather Products

Precipitation

NOTE: *Precipitation data cannot be displayed at the same time as terrain.*

Precipitation data is not real-time. The lapsed time between collection, processing, and dissemination of radar images can be significant and may not reflect the current radar synopsis. Due to the inherent delays and the relative age of the data, it should be used for long-range planning purposes only.

Displaying Precipitation Weather Information

1) Select the **MAP** Softkey (for the PFD Inset Map, select the **INSET** Softkey). This step is not necessary on the Connext Weather Data Link Page.
2) Select the **PRECIP** Softkey.

Radar data shown represents lowest level, base reflectivity, of radar returns. The display of the information is color-coded to indicate the weather severity level. All weather product legends can be viewed on the Connext Weather Data Link Page. For the Precipitation legend, select the **LEGEND** Softkey when Precipitation is selected for display.

Precipitation Limitations

Radar images may have certain limitations:

- Radar base reflectivity does not provide sufficient information to determine cloud layers or precipitation characteristics (wet hail vs. rain). For example, it is not possible to distinguish between wet snow, wet hail, and rain.
- Radar base reflectivity is sampled at the minimum antenna elevation angle. An individual radar site cannot depict high altitude storms at close ranges. It has no information about storms directly over the site.
- When zoomed in to a range of 30 nm, each square block on the display represents an area of four square kilometers.

The following may cause abnormalities in displayed radar images:

- Ground clutter
- Strobes and spurious radar data
- Sun strobes (when the radar antenna points directly at the sun)
- Interference from buildings or mountains, which may cause shadows
- Metallic dust from military aircraft, which can cause alterations in radar scans

Infrared Satellite

Infrared Satellite (IR SAT) data depicts cloud top temperatures from satellite imagery. Brighter cloud top colors indicate cooler temperatures occurring at higher altitudes.

Displaying Cloud Tops information

1) Select the Connext Weather Data Link Page.
2) Select the **IR SAT** Softkey.

To display the Infrared Satellite legend, select the **LEGEND** Softkey when Infrared Satellite data is selected for display.

Datalink Lightning

Lightning data shows the approximate location of cloud-to-ground lightning strikes. A strike icon represents a strike that has occurred within a two-kilometer region. Neither cloud-to-cloud nor the exact location of the lightning strike is displayed.

If the aircraft is also equipped with the L-3 WX-500 Stormscope®, only one lightning product may be enabled for display at a time.

Displaying Datalink Lightning information

1) Select the **MAP** Softkey (for the PFD Inset Map, select the **INSET** Softkey). This step is not necessary on the Connext Weather Data Link Page.
2) Select the **DL LTNG** Softkey.

To display the Datalink Lightning legend on the Weather Data Link Page, select the **LEGEND** Softkey when Datalink Lightning is selected for display.

SIGMETs and AIRMETs

The entire SIGMET or AIRMET is displayed as long as any portion of it is occurring within the coverage area of the Connext data request.

Displaying SIGMETs and AIRMETs

1) Select the Connext Weather Data Link Page.
2) Select the **SIG/AIR** Softkey.
3) To view the text of the SIGMET or AIRMET, press the **RANGE** Knob and move the Map Pointer over the icon.
4) Press the **ENT** key.

To display the SIGMET and AIRMET legend, select the **LEGEND** Softkey when SIGMETs and AIRMETs are selected for display.

METARs and TAFs

***NOTE:** METAR information is only displayed within the installed aviation database service area.*

METAR and TAF text are displayed on the Weather Information Page. TAF information is displayed in its raw form when it is available.

Displaying METAR and TAF text

1) On the Connext Weather Data Link Page, select the **METAR** Softkey.
2) Press the **RANGE** Knob and pan to the desired airport.
3) Press the **ENT** Key. The Weather Information Page is shown with METAR and TAF text.
4) Use the **FMS** Knob or the **ENT** Key to scroll through the METAR and TAF text. METAR text must be completely scrolled through before scrolling through the TAF text.
5) Press the **FMS** Knob or the **CLR** Key to return to the Connext Weather Data Link Page.

Or:

1) Select the Weather Information Page.
   a) Turn the large **FMS** Knob to select the Waypoint Page Group.
   b) Select the **WX** Softkey to select the Weather Information Page.

2) Press the **FMS** Knob to display the cursor.
3) Use the **FMS** Knob to enter the desired airport and press the **ENT** Key.
4) Use the **FMS** Knob or the **ENT** Key to scroll through the METAR and TAF text. Note that the METAR text must be completely scrolled through before scrolling through the TAF text.

To display the METAR legend on the Connext Weather Data Link Page, select the **LEGEND** Softkey when METARs are selected for display.

Winds Aloft

Winds Aloft data shows the forecasted wind speed and direction at the surface and at selected altitudes. Altitude can be displayed in 3,000-foot increments up to 42,000 feet MSL.

Displaying Winds Aloft data

1) Select the Connext Weather Data Link Page.
2) Select the **MORE WX** Softkey.
3) Select the **WIND** Softkey.
4) Select the desired altitude level: SFC (surface) up to 42,000 feet. Select the **NEXT** or **PREV** Softkey to cycle through the altitude softkeys. The **WIND** Softkey label changes to reflect the altitude selected.

To display the Winds Aloft legend, select the **LEGEND** Softkey when Winds Aloft is selected for display.

PIREPs

Pilot Weather Reports (PIREPs) describe in-flight weather encountered by pilots. A PIREP may contain unforecast adverse weather conditions, such as low in-flight visibility, icing conditions, wind shear, turbulence, and type of aircraft flown. PIREPs are issued as either Routine (UA) or Urgent (UUA).

Displaying PIREP text

1) Select the Connext Weather Data Link Page.
2) Select the **MORE WX** Softkey.
3) Select the **PIREPS** Softkey.
4) Press the **RANGE** Knob and pan to the desired weather report. A gray circle will appear around the weather report when it is selected.

5) Press the **ENT** Key. The PIREP tex is first displayed in a decoded fashion, then as raw text.

6) Use the **FMS** Knob or the **ENT** Key to scroll through the PIREP text.

7) Press the **FMS** Knob or the **CLR** Key to close the PIREP text window and return to the Connext Weather Data Link Page.

To display the PIREP or AIREP legend, select the **LEGEND** Softkey when PIREPs or AIREPs are selected for display.

The PIREP color is determined by the type (routine or urgent).

TRAFFIC AVOIDANCE SYSTEMS

- If Traffic information Service (TIS) is configured, a **STANDBY**, **OPERATE**, and **TNA MUTE** Softkey will be displayed.
- If a Traffic Advisory System (TAS) or Traffic Collision Avoidance System (TCAS I) is configured, a **STANDBY**, **OPERATE** or **NORMAL**, **TEST**, and **ALT MODE** Softkey will be displayed.
- If a Traffic Collision Avoidance System (TCAS II) is configured, an **REL**, **ABS**, **TFC STBY**, **TA ONLY**, **TA/RA**, **TEST**, and **ALT RNG** Softkey will be displayed.

Traffic Symbol	Description
	Non-Threat Traffic (intruder is beyond 5 nm and greater than 1200' vertical separation)
	Proximity Advisory (PA)(not available with TIS) (intruder is within 5 nm and less than 1200' vertical separation)
	Traffic Advisory (TA) (closing rate, distance, and vertical separation meet TA criteria)
	Traffic Advisory Off Scale
	Resolution Advisory (RA)(TCAS II only) (Potential collision area is within 15 to 35 seconds)
	Resolution Advisory Off Scale (TCAS II only)

Traffic Symbol Description

Traffic Information Service (TIS)

NOTE: *If the G1000 is configured to use an optional Traffic Advisory System (TAS), TIS is not available for use.*

NOTE: *Traffic Information Service (TIS) is only available when the aircraft is within the service volume of a TIS capable terminal radar site.*

Displaying Traffic on the Traffic Map Page

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the Traffic Map Page.
3) Select the **OPERATE** Softkey to begin displaying traffic. 'OPERATING' is displayed in the Traffic Mode field.
4) Select the **STANDBY** Softkey to place the system in the Standby Mode. 'STANDBY' will be displayed in the Traffic Mode field.
5) Rotate the **Joystick** clockwise to display a larger area or rotate counter-clockwise to display a smaller area.
6) Select the **TNA MUTE** Softkey to mute the "Traffic Not Available" aural alert.

Displaying Traffic on the Navigation Map

1) Ensure TIS is operating. With the Navigation Map displayed, select the **MAP** Softkey.
2) Select the **TRAFFIC** Softkey. Traffic will now be displayed on the map.

Traffic Advisory System (TAS) or Traffic Collision Avoidance System (TCAS 1, GTS 850/855 only) (Optional)

System Self Test

1) Set the range to 2/6 nm.
2) Select the **STANDBY** Softkey.
3) Select the **TEST** Softkey.
4) Self test will take approximately eight seconds to complete. When completed successfully, traffic symbols will be displayed and a voice alert appropriate for the installed system will be heard indicating the test passed (see Annuciations & Alerts section). If the self test fails, the system will revert to Standby Mode and a voice alert appropriate for the installed system will be heard indicating the test failed.

Displaying Traffic on the Traffic Map Page

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the second rectangular page icon.
3) Select the **OPERATE** or **NORMAL** Softkey to begin displaying traffic. 'OPERATING' is displayed in the Traffic Mode field.
4) Select the **ALT MODE** Softkey to change the altitude display volume. Select the desired altitude volume by selecting the **BELOW**, **NORMAL**, **ABOVE**, or **UNREST** (unrestricted) Softkey. The selection is displayed in the Altitude Mode field.
5) Select the **STANDBY** Softkey to place the system in the Standby Mode. 'STANDBY' will be displayed in the Traffic Mode field.
6) Rotate the **Joystick** clockwise to display a larger area or rotate counter-clockwise to display a smaller area.
7) Select the **FLT ID** Softkey (GTS 800/820/825/850/855 only) to enable or disable Flight ID displayed with the intruder information.

Displaying Traffic on the Navigation Map

1) With the Navigation Map displayed, select the **MAP** Softkey.
2) Select the **TRAFFIC** Softkey. Traffic will now be displayed on the map.

Traffic Collision Avoidance System (TCAS II) (Optional)

***NOTE:** If the system is configured to use TIS or TAS, the optional TCAS II is not available for use.*

System Test

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the Traffic Map Page.
3) Select the **TEST** Softkey. A test pattern of traffic symbols is displayed on the Traffic Page and inset map on the PFD. The VSI will display red with a green climb indication from 0 to 2000 feet per min. The self test takes approximately eight seconds to complete, after which a voice alert "TCAS System Test OK" is heard. In the event the system test fails, a voice alert "TCAS System Test Failed" is heard and a visual annunciation 'TCAS FAIL' appears on the PFD. In addition, a yellow visual annunciation 'FAILED' appears in the center of the Traffic Map Page.

Displaying Traffic on the Traffic Map Page

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the Traffic Map Page.
3) Select the **TA ONLY** or **TA/RA** Softkey to begin displaying traffic. 'TA/RA' or 'TA ONLY' respectively, is displayed in the TCAS Mode field.
4) Select the **STANDBY** Softkey to place the system in the Standby Mode. 'TFC STBY' will be displayed in the TCAS Mode field.
5) Select the **ABS** (absolute) or **REL** (relative) Softkey to display intruder altitude as an absolute altitude or an altitude relative to own aircraft altitude.
6) Rotate the **Joystick** clockwise to display a larger area or rotate counter-clockwise to display a smaller area.

Changing the Altitude Range

1) On the Traffic Page, select the **ALT RNG** Softkey.
2) Select one of the following Softkeys:

   ABOVE: Displays non-threat and proximity traffic from 9900 feet above the aircraft to 2700 feet below the aircraft. Typically used during climb phase of flight.

   NORMAL: Displays non-threat and proximity traffic from 2700 feet above the aircraft to 2700 feet below the aircraft. Typically used during enroute phase of flight.

   BELOW: Displays non-threat and proximity traffic from 2700 feet above the aircraft to 9900 feet below the aircraft. Typically used during descent phase of flight.

   UNREST (unrestricted)**:** All traffic is displayed.
3) To return to the Traffic Page, select the **BACK** Softkey.

Displaying Traffic on the Navigation Map

1) Ensure TCAS II system is operating. With the Navigation Map displayed, select the **MAP** Softkey.
2) Select the **TRAFFIC** Softkey. Traffic will now be displayed on the map.

TERRAIN AWARENESS & WARNING SYSTEM

TAWS-A (Optional)

WARNING: *The TAWS display shows supplemental information only. It should not be used for navigation.*

NOTE: *Terrain data is not displayed when the aircraft is outside the installed terrain database coverage area.*

NOTE: *TAWS-A operation is only available when the system is configured for a TAWS-A installation.*

Manual System Test

1) While the TAWS-A Page is displayed, press the **MENU** Key.
2) Turn the small **FMS** Knob to select 'Test TAWS System'.
3) Press the **ENT** Key. During the test 'TAWS TEST' is displayed in the center of the TAWS-A Page.

   When all is in working order, "TAWS System Test, OK" is heard.

Displaying the TAWS-A Page

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the TAWS-A Page.
3) If desired, select the **VIEW** Softkey to access the **ARC** and **360** softkeys. When the **ARC** Softkey is selected, a radar-like 120° view is displayed. Select the **360** Softkey to return to the 360° default display.
4) Rotate the **Joystick** clockwise to increase the display range or rotate counter-clockwise to decrease the display range.

Color	Terrain/Obstacle Location
Red	Terrain/Obstacle above or within 100' below current aircraft altitude.
Yellow	Terrain/Obstacle between 100' and 1000' below current aircraft altitude.
Black	Terrain/Obstacle is more than 1000' below aircraft altitude.

Enable/Disable Aviation Data

1) While the TAWS-A Page is displayed, press the **MENU** Key.
2) Turn the small **FMS** Knob to select "Show (or Hide) Aviation Data".
3) Press the **ENT** Key.

Inhibiting/Enabling FLTA and PDA Alerting

1) Select the TAWS-A Page.
2) Select the **TAWS INH** Softkey to inhibit or enable TAWS-A (choice dependent on current state).

Overriding Flaps-based FIT Alerting

1) Select the TAWS-A Page.
2) Select the **FLAP OVR** Softkey.

Inhibiting/Enabling GPWS Alerting

1) Select the TAWS-A Page.
2) Select the **GPWS INH** Softkey to inhibit or enable GPWS alerts (choice dependent on current state).

Inhibiting/Enabling GSD Alerting

NOTE: *Only available during a GSD alert.*

1) Select the TAWS-A Page.
2) Select or press the **GS INH** or **GP INH** Softkey to inhibit or enable GSD alerts (softkey choice dependent on present GSD alert type).

TAWS-B

WARNING: *The TAWS display shows supplemental information only. It should not be used for navigation.*

NOTE: *Terrain data is not displayed when the aircraft is outside the installed terrain database coverage area.*

NOTE: *TAWS-B operation is only available when the system is configured for a TAWS-B installation.*

Manual System Test

1) While the TAWS-B Page is displayed, press the **MENU** Key.
2) Turn the small **FMS** Knob to select 'Test TAWS System'.
3) Press the **ENT** Key. During the test 'TAWS TEST' is displayed in the center of the TAWS-B Page.

   When all is in working order, "TAWS System Test, OK" is heard.

Display Terrain and Obstacles on the TAWS-B Page

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the TAWS-B Page.
3) If desired, select the **VIEW** Softkey to access the **ARC** and **360** softkeys. When the **ARC** Softkey is selected, a radar-like 120° view is displayed. Select the **360** Softkey to return to the 360° default display.
4) Rotate the **Joystick** clockwise to increase the display range or rotate counter-clockwise to decrease the display range.

Color	Terrain/Obstacle Location
Red	Terrain/Obstacle above or within 100' below current aircraft altitude.
Yellow	Terrain/Obstacle between 100' and 1000' below current aircraft altitude.
Black	Terrain/Obstacle is more than 1000' below aircraft altitude.

Enable/Disable Aviation Data

1) While the TAWS-B Page is displayed, press the **MENU** Key.
2) Turn the small **FMS** Knob to select "Show (or Hide) Aviation Data".
3) Press the **ENT** Key.

TAWS Inhibit

NOTE: If TAWS alerts are inhibited when the Final Approach Fix is the active waypoint in a GPS SBAS approach, a LOW ALT annunciation may appear on the PFD next to the altimeter if the current aircraft altitude is at least 164 feet below the prescribed altitude at the Final Approach Fix.

Inhibit TAWS

While the TAWS-B Page is displayed, select the **INHIBIT** Softkey.

Or:

1) Press the **MENU** Key.
2) Turn the small **FMS** Knob to select 'Inhibit TAWS'.
3) Press the **ENT** Key.

Enable TAWS

While the TAWS-B Page is displayed, select the **INHIBIT** Softkey.

Or:

1) While the TAWS-B Page is displayed, press the **MENU** Key.
2) Turn the small **FMS** Knob to select 'Enable TAWS'.
3) Press the **ENT** Key.

Displaying Terrain and Obstacles on the Navigation Map

1) With the Navigation Map displayed, select the **MAP** Softkey.
2) Select the **TERRAIN** Softkey. Terrain and obstacles will now be displayed on the map.

AIRBORNE COLOR WEATHER RADAR

WARNING: *Begin transmitting only when it is safe to do so. If it is desired to transmit while the aircraft is on the ground, no personnel or objects should be within 11 feet of the antenna.*

CAUTION: *In Standby Mode, the antenna is parked at the center line. It is always a good idea to put the radar in Standby Mode before taxiing the aircraft to prevent the antenna from bouncing on the bottom stop and possibly causing damage to the radar assembly.*

Displaying Weather on the Weather Radar Page

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the Weather Radar Page.
3) Select the **MODE** Softkey.

4) If the aircraft is on the ground, select the **STANDBY** Softkey to initiate the one minute warm-up period. After the warm-up is complete, the radar will enter the Standby Mode. After the aircraft is airborne, select the **WEATHER** Softkey.

   Or:

   If the aircraft is already airborne, select the **WEATHER** or **GROUND** Softkey. The one-minute warm-up period will be initiated, after which the radar will begin transmitting. The horizontal scan is initially displayed.

5) Turn the **Joystick** to select the desired range.

6) If desired, select the **VERTICAL** Softkey for vertical scanning.

Adjusting Antenna Tilt

Move the **Joystick** up or down to adjust the tilt of the antenna up or down. Monitor the displayed tilt value in the TILT field.

When scanning vertically, a Tilt Line may be displayed to aid in positioning the tilt of the antenna. If the Tilt Line is not displayed, perform the following steps:

1) Press the **MENU** Key
2) Turn the large **FMS** Knob to select 'Show Tilt Line'.
3) Press the **ENT** Key.

Adjusting Antenna Bearing

Move the **Joystick** right or left to adjust the azimuth position of the antenna right or left. Monitor the displayed bearing value in the BEARING field.

When scanning horizontally, a Bearing Line may be displayed to aid in positioning the antenna for the vertical scan. If the Bearing Line is not displayed, perform the following steps:

1) Press the **MENU** Key
2) Turn the large **FMS** Knob to select 'Show Bearing Line'.
3) Press the **ENT** Key.

Vertically Scan a Storm Cell

1) While in the Horizontal Scan view, move the **Joystick** to place the Bearing Line on the desired storm cell, or other area, to be vertically scanned.
2) Select the **VERTICAL** Softkey. A vertical 'slice' of the selected area will now be displayed.

3) Move the **Joystick** right or left to move the scanned "slice" a few degrees right or left.

4) Turn the **Joystick** to adjust the range.

5) To select a new area to be vertically scanned, select the **HORIZON** Softkey to return to the Horizontal Scan view and repeat the previous steps.

Adjusting Gain

WARNING: *Changing the gain in Weather Mode will cause precipitation intensity to be displayed as a color not representative of the true intensity. Remember to return the gain setting to 'Calibrated' for viewing the actual intensity of precipitation.*

1) Select the **GAIN** Softkey to activate the cursor in the 'GAIN' field.

2) Turn the small **FMS** Knob to adjust the gain for the desirable level. The gain setting is visible in the gain field as a movable horizontal bar in a flashing box. The line pointer is a reference depicting the calibrated position.

3) Press the **FMS** Knob to remove the cursor.

4) Select the **GAIN** Softkey again to recalibrate the gain. 'CALIBRATED' will be displayed in the 'GAIN' field.

Ground Mapping

1) Select the **MODE** Softkey.

2) Select the **GROUND** Softkey to place the radar in Ground Map Mode.

3) Select the **BACK** Softkey.

Sector Scan

1) While in the Horizontal Scan Mode, move the **Joystick** right or left to place the Bearing Line in the desired position. The location of the Bearing Line will become the center point of the Sector Scan.

2) Press the **FMS** Knob to display the cursor.

3) Turn the large **FMS** Knob to place the cursor in the SECTOR SCAN field.

4) Turn the small **FMS** Knob to select FULL, 60˚, 40˚, or 20˚ scan.

5) If desired, readjust the Bearing Line with the **Joystick** to change the center of the Sector Scan.

6) Press the **FMS** Knob to remove the cursor.

Antenna Stabilization

1) To activate or deactivate the antenna stabilization, select the **MODE** Softkey.
2) Select the **STAB ON** Softkey to activate antenna stabilization or select the **STAB OFF** Softkey to deactivate. The current stabilization condition is shown in the upper right of the weather radar display.

Weather Attenuated Color Highlight (WATCH®)

To activate or deactivate the WATCH® feature, select the **WATCH** Softkey. This feature is only available in the Horizontal Scan Mode.

Weather Alert

To activate or deactivate Weather Alert, select the **WX ALRT** Softkey. Activating and deactivating will also enable or inhibit the alert on the PFD.

Automatic Standby

When the weather radar system is in the Weather or Ground Map Mode, upon landing the system will automatically switch to Standby Mode.

Blank Page

ADDITIONAL FEATURES

SYNTHETIC VISION

WARNING: *Use appropriate primary systems for navigation, and for terrain, obstacle, and traffic avoidance. SVT is intended as an aid to situational awareness only and may not provide the accuracy and/or fidelity upon which to solely base decisions and/or plan maneuvers to avoid terrain, obstacles, or traffic.*

WARNING: *Do not use SVT runway depiction as the sole means for determining the proximity of the aircraft to the runway or for maintaining the proper approach path angle during landing.*

Synthetic Vision Technology (SVT) functionality is offered as an optional enhancement to the G1000 system.

SVT is primarily comprised of a computer-generated forward-looking, attitude aligned view of the topography immediately in front of the aircraft from the pilot's perspective. SVT information is shown on the primary flight display (PFD).

In addition to SVT enhancement to the PFD, the following features have been added to the PFD:

- Pathways
- Flight Path Marker
- Horizon Heading Marks
- Terrain and Obstacle Alerting
- Three-dimensional Traffic
- Airport Signs
- Runway Display

Displaying SVT Terrain

1) Press the **PFD** Softkey.
2) Press the **SYN VIS** Softkey.
3) Press the **SYN TERR** Softkey.
4) Press the **BACK** Softkey to return to the previous page.

Displaying Pathways

1) Press the **PFD** Softkey.
2) Press the **SYN VIS** Softkey.
3) If not already enabled, press the **SYN TERR** Softkey.
4) Press the **PATHWAY** Softkey.
5) Press the **BACK** Softkey to return to the previous page.

Displaying Heading on the Horizon

1) Press the **PFD** Softkey.
2) Press the **SYN VIS** Softkey.
3) If not already enabled, press the **SYN TERR** Softkey.
4) Press the **HRZN HDG** Softkey.
5) Press the **BACK** Softkey to return to the previous page.

Displaying Airport Signs

1) Press the **PFD** Softkey.
2) Press the **SYN VIS** Softkey.
3) If not already enabled, press the **SYN TERR** Softkey.
4) Press the **APTSIGNS** Softkey.
5) Press the **BACK** Softkey to return to the previous page.

TERMINAL PROCEDURE CHARTS

NOTE: With the availability of SafeTaxi®, ChartView, or FliteCharts®, it may be necessary to carry another source of charts on-board the aircraft.

SafeTaxi®

SafeTaxi® is an enhanced feature that gives greater map detail as the map range is adjusted in on the airport. The airport display on the map reveals runways with numbers, taxiways identifiers, and airport landmarks including ramps, buildings, control towers, and other prominent features. Resolution is greater at lower map ranges. The aircraft symbol provides situational awareness while taxiing.

Pressing the DCLTR Softkey (declutter) once removes the taxiway markings and airport identification labels. Pressing the DCLTR Softkey twice removes VOR station ID, the VOR symbol, and intersection names if within the airport plan view. Pressing

the DCLTR Softkey a third time removes the airport runway layout, unless the airport in view is part of an active route structure. Pressing the DCLTR Softkey again cycles back to the original map detail.

The SafeTaxi database contains detailed airport diagrams for selected airports. These diagrams provide the pilot with situational awareness by displaying the aircraft position in relation to taxiways, ramps, runways, terminals, and services. This information should not be used by the pilot as the basis for maneuvering the aircraft on the ground. This database is updated on a 56-day cycle.

ChartView

ChartView resembles the paper version of Jeppesen terminal procedures charts. The charts are displayed in full color with high-resolution. The MFD depiction shows the aircraft position on the moving map in the plan view of most approach charts and on airport diagrams.

The ChartView database is updated on a 14-day cycle. If the ChartView database is not updated within 70 days of the expiration date, ChartView will no longer function.

FliteCharts®

FliteCharts® resemble the paper version of AeroNav Services terminal procedures charts. The charts are displayed with high-resolution and in color for applicable charts. Current aircraft position is not displayed on FliteCharts.

The FliteCharts database contains procedure charts for the United States only. This database is updated on a 28-day cycle. If not updated within 180 days of the expiration date, FliteCharts will no longer function.

View Charts from the Navigation Map Page

1) Select the **SHW CHRT** Softkey when displayed.

   Or:

   Move the map pointer to point to a desired point on the map and select the **SHW CHRT** Softkey.

2) Select the **DP, STAR, APR, WX,** and **NOTAM** softkeys to access charts for departures, arrivals, approaches, weather and NOTAMs Note that NOTAMS are only available with ChartView.

3) Select the **GO BACK** Softkey to return to the previous page.

View Charts from the Active Flight Plan Page

1) While viewing the Active Flight Plan Page, press the **FMS** Knob to activate the cursor.
2) Turn the large **FMS** Knob to select the departure airport, destination airport, departure, arrival, or approach.
3) Select the **SHW CHRT** Softkey. The appropriate chart will be displayed, if available for the item selected.
4) Select the **GO BACK** Softkey to return to the previous page.

Change Day/Night View

1) While viewing a chart press the **MENU** Key to display the Page Menu OPTIONS.
2) Turn the large **FMS** Knob to highlight the 'Chart Setup' Menu Option and press the **ENT** Key.
3) Turn the large **FMS** Knob to move between the 'FULL SCREEN' and 'COLOR SCHEME' Options.
4) Turn the small **FMS** Knob to choose between the 'On' and 'Off' Full Screen Options.
5) Turn the small **FMS** Knob to choose between 'Day', 'Auto', and 'Night' Options.
6) In Auto Mode, turn the large **FMS** Knob to select the percentage field and change percentage with the small **FMS** Knob. The percentage of change is the day/night crossover point based on backlighting intensity.
7) Press the **FMS** Knob when finished to remove the Chart Setup Menu.

AIRPORT DIRECTORY

The Aircraft Owners and Pilots Association (AOPA) and optional AC-U-KWIK Airport Directory databases offer detailed information regarding services, hours of operation, lodging options, and more.

Both Airport Directories are available for downloading at flygarmin.com. However, copy only one of the databases to the Supplemental Data Card. The system cannot recognize both databases simultaneously.

View Airport Directory Information

While viewing the WPT-Airport Information Page, if necessary, select the **INFO-1** Softkey to change the softkey label to display **INFO-2**. Airport Directory information is displayed on the right half of the display.

SATELLITE TELEPHONE AND DATA LINK SERVICES

NOTE: *Separate accounts must be established to access the Iridium satellite network for voice/SMS and low speed data transmission, and high speed data transmission for the maintenance reports.*

Operation of these features in the cockpit is accomplished through the AUX-TELEPHONE, AUX-TEXT MESSAGING, AUX-REPORT STATUS, and AUX-WI-FI SETUP Pages. For operation using the cabin handset, consult the instructions provided with the handset.

Registering with Garmin Connext™

A subscriber account must be established for each Iridium transceiver prior to using the Iridium Satellite System for telephone services. Before setting up an Iridium account, obtain the serial number of the Iridium Transceiver (GSR1) and the System ID by selecting the AUX- SYSTEM STATUS Page. Contact Garmin at 1-866-739-5687 in the United States or 913-397-8200, ext. 1135.

After a subscriber account has been established, the system must be registered for datalink features such as reporting services or Garmin Connext Weather. Registration is accomplished by entering the required access code. This process is only performed when initially setting up the system for Connext services.

Registering the system for datalink services

1) With the aircraft outside and having a clear view of the sky, turn the large **FMS** Knob on the MFD to select the AUX page group.
2) Turn the small **FMS** Knob to select the AUX-SYSTEM STATUS. Note the System ID number in the AIRFRAME field.
3) Turn the small **FMS** Knob to select the AUX-REPORTS STATUS or AUX-WI-FI SETUP Page.
4) If necessary, select the **REPORTS** Softkey. The AUX-REPORT STATUS Page is now displayed.
5) Press the **MENU** Key. The Page Menu window is now displayed.
6) Select 'Register With Connext' in the menu list.
7) Press the **ENT** Key. The Garmin Flight Data Service Registration window is now displayed.
8) Enter the access code obtained from Garmin Connext in the ACCESS CODE field.

9) Press the **ENT** Key. REGISTER will now be highlighted.

10) Press the **ENT** Key. System registration is complete when 'REGISTERED' is displayed in the STATUS field.

Disable/Enable Iridium Transceiver

Iridium telephone and data communications may be turned on or off by performing these simple steps.

Disable/Enable Telephone and Low Speed Data Services:

1) Turn the large **FMS** Knob on the MFD to select the AUX page group.

2) Turn the small **FMS** Knob to select the AUX-REPORTS STATUS or AUX-WI-FI SETUP Page.

3) If necessary, select the **REPORTS** Softkey. The AUX-REPORT STATUS Page is now displayed.

4) Press the **MENU** Key. The Page Menu window is now displayed.

5) Turn the **FMS** Knob to select 'Disable Iridium Transmission' in the menu list.

6) Press the **ENT** Key. The Iridium transceiver is now disabled.

7) To enable the Iridium transceiver, repeat steps 1 through 4, then select 'Enable Iridium Transceiver'.

Telephone Communication

The pilot or copilot can place and answer calls on the Iridium satellite network as well as to or from the telephone handset in the cabin. Calls can also be answered or made from the cabin phone, however, only actions initiated from the cockpit phone will be discussed here. See the cabin handset user guide for more information. Control and monitoring of telephone functions are accomplished through the AUX-TELEPHONE Page.

Viewing the Telephone Page

1) Turn the large **FMS** Knob on the MFD to select the AUX page group.

2) Turn the small **FMS** Knob to select the AUX - TELEPHONE or AUX - TEXT MESSAGING Page.

3) If necessary, select the **TEL** Softkey to display the AUX-TELEPHONE Page.

Internal Phone	External Phone	Description
		Phone is Idle
		Phone is ringing
		Phone has a dial tone (off hook) or connected to another phone
		Phone dialed is busy
		Phone is dialing another phone
		Phone has failed
		Phone status not known
		Phone is disabled
		Phone is reserved for data transmission
		Calling other phone or incoming call from other phone
		Other phone is on hold
		Phones are connected

Incoming Calls

When viewing MFD pages other than the AUX-TELEPHONE Page, a pop-up alert will be displayed. If the call is from the cabin, CABIN will be displayed. If the incoming call is an Iridium network call, IRIDIUM will be displayed. The pop-up alert may be inhibited at times, such as during takeoff. In addition to the pop-up alert, a ringing phone symbol will be displayed to the right of the MFD page title. Also, the voice alert "Incoming Call" will be heard on the selected cockpit audio.

Answer an Incoming Call in the Cockpit

1) Press the **TEL** Key on the appropriate audio panel.
2) Select the **ANSWER** Softkey on the MFD.

Or:

While viewing the AUX-TELEPHONE Page

1) Press the **TEL** Key on the appropriate audio panel.
2) Press the **MENU** Key to display the Page Menu.
3) Turn either **FMS** Knob to place the cursor on 'Answer Incoming Call'.
4) Press the **ENT** Key.

Selecting the **IGNORE** Softkey will extinguish the pop-up window and leave the call unanswered. Selecting the **TEL** Softkey will display the AUX-TELEPHONE Page allowing additional call information to be viewed before answering.

Mute Incoming Call Alerts

1) With the AUX-TELEPHONE Page displayed, press the **MENU** Key on the MFD to display the Page Menu.
2) Turn either **FMS** Knob to place the cursor on 'Mute Incoming Call Alerts'.
3) Press the **ENT** Key. The voice and pop-up alert will not be displayed now when an incoming call is received.

Outgoing Calls

Voice calls can be made from the cockpit to the handset in the cabin, or to an external phone through the Iridium Satellite Network.

Make a Call to the Cabin:

1) Press the **TEL** Key on the appropriate audio panel.
2) Select the **DIAL** Softkey on the MFD.
3) Press the **ENT** Key. The cursor will move from 'CABIN' to 'OK'.
4) Press the **ENT** Key again. The cabin phone will now ring.

To exit the call, select the **HANGUP** Softkey.

Make an External Call from the Cockpit

1) Press the **TEL** Key on the appropriate audio panel.
2) Select the **DIAL** Softkey on the MFD.
3) Turn the small **FMS** Knob to select 'IRIDIUM'.
4) Press the **ENT** Key. The cursor has now moved to the phone number entry field.
5) Enter the desired telephone number (country code first) by selecting the number softkeys on the MFD or by pressing the numeric keys on the MFD Control Unit.
6) Press the **ENT** Key. 'OK' is highlighted.
7) Press the **ENT** Key. The system will begin calling the number.

To exit the call, select the **HANGUP** Softkey.

Placing The Cockpit Phone on Hold

Select the **HOLD** Softkey on the MFD.

Or:

1) Press the **MENU** Key to display the Page Menu.
2) Turn either **FMS** Knob to place the cursor on 'Put Current Call On Hold'.
3) Press the **ENT** Key.

Select the **HOLD** Softkey again to resume the call.

Transferring a Call from the Cockpit

From the cockpit phone, a external call can be transferred to the cabin phone, or a call with the cabin phone can be transferred to an external phone, or (when two Iridium Transceivers are installed) an external call can be transferred to another external phone.

1) Select the **TRANS** Softkey on the MFD.

   Or:

   a) Press the **MENU** Key to display the Page Menu.

   b) Turn either **FMS** Knob to place the cursor on 'Transfer Current Call'.

   c) Press the **ENT** Key.

2) Press the **ENT** Key. The cursor now highlights the phone number entry field.
3) Enter the phone number as discussed earlier for making an external call on the Iridium satellite network.
4) Press the **ENT** Key. 'OK' is now highlighted.
5) Press the **ENT** Key again to place the call.

Making a Conference Call from the Cockpit

1) Select the **CONF** Softkey on the MFD.

   Or:

   a) Press the **MENU** Key to display the Page Menu.

   b) Turn either **FMS** Knob to place the cursor on 'Conference Current Call'.

   c) Press the **ENT** Key.

2) Press the **ENT** Key. The cursor now highlights the phone number entry field.
3) Enter the phone number as discussed earlier for making an external call on the Iridium satellite network.
4) Press the **ENT** Key. 'OK' is now highlighted.
5) Press the **ENT** Key again to place the call.

Text Messaging (SMS)

Messages may be sent to an email address or text message capable cellular telephone. Message length is limited to 160 characters, including the email address.

The text messaging user interface is mainly through the AUX-TEXT MESSAGING Page.

Viewing the Text Messaging Page

1) Turn the large **FMS** Knob on the MFD to select the AUX page group.
2) Turn the small **FMS** Knob to select the AUX - TELEPHONE or AUX - TEXT MESSAGING Page.
3) If necessary, select the **SMS** Softkey to display the AUX-TEXT MESSAGING Page.

Message Symbol	Description
	Received text message that has not been opened
	Received text message that has been opened
	Saved text message, draft not sent
	System is sending text message
	Text message has been sent
	System failed to send text message
	Predefined text message

Viewing a Text Message When Received

When viewing MFD pages other than the AUX-TEXT MESSAGING Page, a pop-up alert will be displayed when a new text message is received.

Select the **VIEW** Softkey to view the message. Selecting the **IGNORE** Softkey will extinguish the pop-up window and leave the text message unopened. Selecting the **IGNR ALL** Softkey will extinguish the pop-window and ignore all future incoming text messages. Selecting the **SMS** Softkey will display the AUX-TEXT MESSAGING Page.

The pop-up alerts may be enabled or disabled through the Page Menu.

Enable/Disable Incoming Text Message Pop-Up Alerts

1) With the AUX-TEXT MESSAGING Page displayed, press the **MENU** Key on the MFD to display the Page Menu.
2) Turn either **FMS** Knob to place the cursor on 'Disable New Message Popups' or 'Enable New Message Popups'.
3) Press the **ENT** Key. The pop-up alert will not be displayed when an incoming text message is received.

Reply to a Text Message

While viewing the text message, select the **REPLY** Softkey.

Or:

a) Press the **MENU** Key to display the Page Menu.
b) Turn either **FMS** Knob to place the cursor on 'Reply To Message'.
c) Press the **ENT** Key.

Sending a Text Message

1) While viewing the AUX-TEXT MESSAGING Page, select the **NEW** Softkey.

Or:

a) Press the **MENU** Key to display the Page Menu.
b) Turn either **FMS** Knob to place the cursor on 'Draft New Message'.
c) Press the **ENT** Key.

2) The TEXT MESSAGE DRAFT Window is now displayed with the cursor in the 'TO' field. Enter the desired telephone number or email address. Entry can be accomplished through the alphanumeric keys on the MFD Controller, or combination of the **FMS** Knob on the controller and softkeys on the MFD. The **FMS** Knob is used to enter letters and numbers, or numbers can be entered from the MFD by selecting the **NUMBERS** Softkey. Select the **CAP LOCK** Softkey to create upper and lower case alpha characters. Special characters can be accessed by selecting the **SYMBOLS** Softkey.
3) Press the **ENT** Key. The cursor is now displayed in the 'MESSAGE' field.
4) Enter the desired message using any combination of entry methods as described in step 2.
5) Press the **ENT** Key.
6) Select the **SEND** Softkey to send the message immediately, or select the **SAVE** Softkey to save the message in Outbox for sending at a later time. Select the **CANCEL** Softkey to delete the message.

Predefined Text Messages

Time and effort can be saved in typing text messages that are used repeatedly by saving these messages as a predefined message.

Create a Predefined Text Message

1) While viewing the AUX-TEXT MESSAGING Page, press the **MENU** Key to display the Page Menu.
2) Turn either **FMS** Knob to select 'Edit Predefined Messages'.
3) Press the **ENT** Key. The PREDEFINED MESSSAGES view is now displayed.
4) Select the **NEW** Softkey.

   Or:

   a) Press the **MENU** Key to display the Page Menu.

   b) Turn either **FMS** Knob to place the cursor on 'Draft New Predefined Message'.

   c) Press the **ENT** Key. The PREDEFINED SMS TEXT MESSAGE Window is now displayed.
5) The cursor is displayed in the 'TITLE' field. Enter the desired message title. Entry can be accomplished through the alphanumeric keys on the MFD Controller, or combination of the **FMS** Knob on the controller and softkeys

on the MFD. The **FMS** Knob is used to enter letters and numbers, or numbers can be entered from the MFD by selecting the **NUMBERS** Softkey. Select the **CAP LOCK** Softkey to create upper and lower case alpha characters. Special characters can be accessed by selecting the **SYMBOLS** Softkey.

6) Press the **ENT** Key. The cursor is now displayed in the 'MESSAGE' field.

7) Enter the desired message using any combination of entry methods as described in step 5.

8) Press the **ENT** Key.

9) Select the **SAVE** Softkey. The new predefined message is now shown in the displayed list. Selecting the **CANCEL** Softkey will delete the message without saving.

10) Press the **MENU** Key to display the Page Menu.

11) Turn either **FMS** Knob to place the cursor on 'Stop Editing Predefined Message'.

12) Press the **ENT** Key.

Send a Predefined Text Message

1) While viewing the AUX-TEXT MESSAGING Page, select the **NEW** Softkey.

2) The TEXT MESSAGE DRAFT Window is now displayed with the cursor in the 'TO' field. Enter the desired telephone number or email address. Entry can be accomplished through the alphanumeric keys on the MFD Controller, or combination of the **FMS** Knob on the controller and softkeys on the MFD. The **FMS** Knob is used to enter letters and numbers, or numbers can be entered from the MFD by selecting the **NUMBERS** Softkey. Select the **CAP LOCK** Softkey to create upper and lower case alpha characters. Special characters can be accessed by selecting the **SYMBOLS** Softkey.

3) Press the **ENT** Key. The cursor is now displayed in the 'MESSAGE' field.

4) Select the **PREDEFD** Softkey. The PREDEFINED MESSAGE MENU Window is displayed.

6) Press the **ENT** Key. The predefined message text is inserted into the message field. If desired, the message can be edited by using the FMS Knobs.

7) Press the **ENT** Key.

8) Select the **SEND** Softkey to transmit the message.

Text Message Boxes

Received text messages reside in the Inbox as 'Read' or 'Unread' messages. The Outbox contains 'Sent" and 'Unsent' text messages. Saved messages that are meant to be sent later are stored as Drafts. Each text message box may be viewed separately, or together in any combination.

Show Inbox Messages

While viewing the AUX-TEXT MESSAGING Page, select the **ARRANGE** Softkey, then select the **INBOX** Softkey.

Or:

a) Press the **MENU** Key to display the Page Menu.

b) Turn either **FMS** Knob to place the cursor on 'Show Inbox Messages'.

c) Press the **ENT** Key. The message box selected for viewing is indicated at the bottom left of the list window.

Show Outbox Messages

While viewing the AUX-TEXT MESSAGING Page, select the **ARRANGE** Softkey, then select the **OUTBOX** Softkey.

Or:

a) Press the **MENU** Key to display the Page Menu.

b) Turn either **FMS** Knob to place the cursor on 'Show Outbox Messages'.

c) Press the **ENT** Key. The message box selected for viewing is indicated at the bottom left of the list window.

Show Draft Messages

While viewing the AUX-TEXT MESSAGING Page, select the **ARRANGE** Softkey, then select the **DRAFTS** Softkey.

Or:

a) Press the **MENU** Key to display the Page Menu.

b) Turn either **FMS** Knob to place the cursor on 'Show Draft Messages'.

c) Press the **ENT** Key. The message box selected for viewing is indicated at the bottom left of the list window.

Arranging Text Messages

The viewed messages may be listed according to the date/time the message was sent or received, the type of message (read, unread, sent, unsent, etc.), or by message address.

View Messages Sorted by Message Date/Time:

While viewing the AUX-TEXT MESSAGING Page, select the **ARRANGE** Softkey, then select the **TIME** Softkey.

Or:

a) Press the **MENU** Key to display the Page Menu.

b) Turn either **FMS** Knob to place the cursor on 'Sort By Date/Time'.

c) Press the **ENT** Key. The sorting selection is indicated at the bottom center of the list window.

View Messages Sorted by Message Type

While viewing the AUX-TEXT MESSAGING Page, select the **ARRANGE** Softkey, then select the **TYPE** Softkey.

Or:

a) Press the **MENU** Key to display the Page Menu.

b) Turn either **FMS** Knob to place the cursor on 'Sort By Type'.

c) Press the **ENT** Key. The sorting selection is indicated at the bottom center of the list window.

View Messages Sorted by Address:

While viewing the AUX-TEXT MESSAGING Page, select the **ARRANGE** Softkey, then select the **ADDRESS** Softkey.

Or:

a) Press the **MENU** Key to display the Page Menu.

b) Turn either **FMS** Knob to place the cursor on 'Sort By Address'.

c) Press the **ENT** Key. The sorting selection is indicated at the bottom center of the list window.

Viewing The Content of a Text Message

1) While viewing the AUX-TEXT MESSAGING Page, select the desired message box.
2) Press the **FMS** Knob to activate the cursor.
3) Turn either **FMS** Knob to select the desired message.
4) Select the **VIEW** Softkey.

   Or:

   Press the **ENT** Key.

   Or:

   a) Press the **MENU** Key to display the Page Menu.
   b) Turn either **FMS** Knob to place the cursor on 'View Selected Message'.
   c) Press the **ENT** Key.
5) To close the text message, select the **CLOSE** Softkey.

   Or:

   a) Press the **MENU** Key to display the Page Menu.
   b) Turn either **FMS** Knob to place the cursor on 'Close Message'.
   c) Press the **ENT** Key.

Mark Selected Message As Read

1) While viewing the Inbox on the AUX-TEXT MESSAGING Page, press the **FMS** Knob to activate the cursor.
2) Turn either **FMS** Knob to select the desired message.
3) Select the **MRK READ** Softkey.

   Or:

   a) Press the **MENU** Key to display the Page Menu.
   b) Turn either **FMS** Knob to place the cursor on 'Mark Selected Message As Read'.
   c) Press the **ENT** Key.

   The message symbol now indicates the message has been opened.

Mark All Messages As Read

1) While viewing the Inbox on the AUX-TEXT MESSAGING Page, press the **MENU** Key to display the Page Menu.
2) Turn either **FMS** Knob to place the cursor on 'Mark All New Messages As Read'.
3) Press the **ENT** Key. A confirmation window is displayed.
4) With cursor highlighting 'YES', press the **ENT** Key. The message symbols now indicate all the message have been opened.

Delete a Message

1) While viewing the Inbox on the AUX-TEXT MESSAGING Page, press the **FMS** Knob to activate the cursor.
2) Turn either **FMS** Knob to select the desired message.
3) Select the **DELETE** Softkey.

   Or:

   a) Press the **MENU** Key to display the Page Menu.

   b) Turn either **FMS** Knob to place the cursor on 'Delete Selected Message'.

   c) Press the **ENT** Key.

WI-FI CONNECTIONS

The system can connect to a IEEE 802.11g compatible network provided the aircraft is on the ground and located within range of the network. The system is capable of WEP64, WEP128,WPA-PSK, and WPA2-PSK encryption formats. WPA-Enterprise and WPA2-Enterprise are not supported. Connections that require web proxies, captive portals, or other elements that require user credentials, including a username and password or a redemption or access code; or require action such as accepting a user agreement, are not supported.

Control and monitoring of Wi-Fi functions are accomplished through the AUX-WI-FI SETUP Page.

View the Wi-Fi Setup Page

1) Turn the large **FMS** Knob on the MFD to select the AUX page group.
2) Turn the small **FMS** Knob to select the AUX - WI-FI SETUP.

Set Up a New Wi-Fi Connection

1) Select the **AVAIL** Softkey on the MFD. A list of available networks will be displayed in the AVAILABLE NETWORKS window. Signal strength is shown for each network, as well as security requirements and whether the network has been saved in the system's memory.

2) If necessary, select the **RESCAN** Softkey to have the system scan again for available networks.

Or:

a) Press the **MENU** Key to display the Page Menu.

b) Turn either **FMS** Knob to place the cursor on 'Rescan Available Networks'.

c) Press the **ENT** Key.

3) Press the **FMS** Knob to place the cursor in the list of networks.

4) Turn either **FMS** Knob to select the desired network.

5) Select the **CONNECT** Softkey.

Or:

a) Press the **MENU** Key to display the Page Menu.

b) Turn either **FMS** Knob to place the cursor on 'Connect To Selected Network'.

c) Press the **ENT** Key.

6) If the network is secured, a window will be displayed in order to enter the necessary passcode. Use the **FMS** Knobs to enter the desired alpha numeric characters. Select the **CAP LOCK** Softkey to enter upper case letters. If there is no security associated with the network, proceed to step 9.

7) Press the **ENT** Key. 'OK' will be highlighted.

8) Press the **ENT** Key again.

9) The SAVE SETTINGS window is now displayed with the cursor highlighting 'SAVE CONNECTION'.

10) The selected network can be saved to system memory to make re-connection easier at a later time.

To connect the selected network without saving:

a) Turn the large FMS Knob to move the cursor to highlight 'CONNECT'.

b) Press the **ENT** Key.

To save and connect the selected network:

a) Press the **ENT** Key. A checkmark is placed in the checkbox and the cursor moves to the airport field.

b) Using the **FMS** Knobs, enter an airport identifier to be associated with the saved network. This aids in identifying the network later in the event of duplicate network names.

c) Press the **ENT** Key. The cursor moves to 'CONNECT'.

d) Press the **ENT** Key again to connect to the selected network.

Edit a Saved Network

1) While viewing list of saved networks, press the **FMS** Knob to activate the cursor.

2) Turn either **FMS** Knob to highlight the network to be edited.

3) Pressing the **ENT** Key at this point will check or uncheck the AUTO CONNECT checkbox. When a checkmark is present, the system will automatically connect to the network when within range.

4) Select the **EDIT** Softkey. The cursor now appears in the CONNECTION SETTINGS window.

5) Turn the large **FMS** Knob to select the network attribute to be edited.

6) Turn the small **FMS** Knob to begin editing the field.

7) When the entry is complete, press the **ENT** Key.

8) Turn the large **FMS** Knob or press the **ENT** Key until 'SAVE' is highlighted.

9) Press the **ENT** Key.

Disconnect a Wi-Fi Network

Select the **DISCNCT** Softkey.

Or:

a) Press the **MENU** Key to display the Page Menu.

b) Turn either **FMS** Knob to place the cursor on 'Disconnect From Network'.

c) Press the **ENT** Key.

Delete a Saved Wi-Fi Network:

1) While viewing the list of saved networks, press the **FMS** Knob to activate the cursor.
2) Turn either **FMS** Knob to highlight the network to be deleted.
3) Select the **DELETE** Softkey. The selected network is removed from the list.

SIRIUSXM RADIO ENTERTAINMENT

The XM Radio Page provides information and control of the audio entertainment features of the SiriusXM Satellite Radio.

Selecting the XM Radio Page

1) Turn the large **FMS** Knob to select the Auxiliary Page Group.
2) Turn the small **FMS** Knob to select the displayed AUX - XM Information Page.
3) Select the **RADIO** Softkey to show the XM Radio Page where audio entertainment is controlled.

Active Channel and Channel List

The Active Channel Box on the XM Radio Page displays the currently selected channel. The Channels List Box of the XM Radio Page shows a list of the available channels for the selected category.

Selecting a Category

The Category Box of the XM Radio Page displays the currently selected category of audio.

1) Select the **CATGRY** Softkey on the XM Radio Page.
2) Select the **CAT +** and **CAT -** Softkeys to cycle through the categories.

   Or:

   Turn the small **FMS** Knob to display the 'Categories' list. Highlight the desired category with the small **FMS** Knob.
3) Press the **ENT** Key.

Select an Available Channel within the Selected Category

1) While on the XM Radio Page, select the **CHNL** Softkey.
2) Select the **CH +** Softkey to move down through the list in the Channel Box, or move up the list with the **CH –** Softkey.

   Or:

   Press the **FMS** Knob to highlight the channel list and turn the large **FMS** Knob to scroll through the channels.
3) With the desired channel highlighted, press the **ENT** Key.

Entering a Channel Directly

1) While on the XM Radio Page, select the **CHNL** Softkey.
2) Select the **DIR CH** Softkey. The channel number in the Active Channel Box is highlighted.
3) Select the numbered softkeys located on the bottom of the display to directly select the desired channel number.
4) Press the **ENT** Key to activate the selected channel.

Assigning Channel Presets

Up to 15 channels from any category can be assigned a preset number.

1) On the XM Radio Page, with the desired channel active, select the **PRESETS** Softkey to access the first five preset channels (**PS1 - PS5**).
2) Select the **MORE** Softkey to access the next five channels (**PS6 – PS10**), and again to access the last five channels (**PS11 – PS15**). Selecting the **MORE** Softkey repeatedly cycles through the preset channels.
3) Select the **SET** Softkey.
4) Select any one of the (**PS1 - PS15**) softkeys to assign a number to the active channel.

Adjusting Volume

Radio volume is controlled at each passenger station.

PILOT PROFILES

Creating a Profile

1) Use the **FMS** Knob to select the AUX - SYSTEM SETUP 1 Page.
2) Press the **FMS** Knob momentarily to activate the flashing cursor.
3) Turn the large **FMS** Knob to highlight 'CREATE' in the Pilot Profile Box.
4) Press the **ENT** Key. A 'Create Profile' window is displayed.
5) Use the **FMS** Knob to enter a profile name up to 16 characters long and press the **ENT** Key. Pilot profile names cannot begin with a blank as the first letter.
6) In the next field, use the small **FMS** Knob to select the desired settings upon which to base the new profile. Profiles can be created based on Garmin factory defaults, default profile settings (initially based on Garmin factory defaults unless edited by the pilot), or current system settings.
7) Press the **ENT** Key.
8) With 'CREATE' highlighted, press the **ENT** Key to create the profile

   Or:

   Use the large **FMS** Knob to select 'CREATE and ACTIVATE' and press the **ENT** Key to activate the new profile.
9) To cancel the process, select 'CANCEL' with the large FMS Knob and press the **ENT** Key.

Selecting an Active Profile

1) Use the **FMS** Knob to select the AUX - SYSTEM SETUP 1 Page.
2) Press the **FMS** Knob momentarily to activate the flashing cursor.
3) Turn the large **FMS** Knob to highlight the active profile field in the Pilot Profile Box.
4) Turn the small **FMS** Knob to display the pilot profile list and highlight the desired profile.
5) Press the **ENT** Key. The system loads and displays the system settings for the selected profile.

Renaming a Profile

1) Use the **FMS** Knob to select the AUX - SYSTEM SETUP 1 Page.
2) Press the **FMS** Knob momentarily to activate the flashing cursor.
3) Turn the large **FMS** Knob to highlight 'RENAME' in the Pilot Profile Box.
4) Press the **ENT** Key.
5) In the 'Rename Profile' window, turn the **FMS** Knob to select the profile to rename.
6) Press the **ENT** Key.
7) Use the **FMS** Knob to enter a new profile name up to 16 characters long and press the **ENT** Key.
8) With 'RENAME' highlighted, press the **ENT** Key.
9) To cancel the process, use the large **FMS** Knob to select 'CANCEL' and press the ENT Key.

Deleting a Profile

1) Use the **FMS** Knob to select the AUX - SYSTEM SETUP 1 Page.
2) Press the **FMS** Knob momentarily to activate the flashing cursor.
3) Turn the large **FMS** Knob to highlight 'DELETE' in the Pilot Profile Box.
4) Press the **ENT** Key.
5) In the 'Delete Profile' window, turn the **FMS** Knob to select the profile to delete.
6) Press the **ENT** Key.
7) With 'DELETE' highlighted, press the **ENT** Key.
8) To cancel the process, use the large **FMS** Knob to select 'CANCEL' and press the **ENT** Key.

Importing a Profile

1) Insert the SD card containing the Pilot Profile into the top card slot on the MFD.
2) Use the **FMS** Knob to select the AUX - SYSTEM SETUP 1 Page.
3) Press the **IMPORT** softkey. If the correct Pilot Profile file is selected; with 'IMPORT' highlighted press the **ENT** Key.

Or:

If the SD card contains more than one Pilot Profile:

a) Turn the large **FMS** Knob to highlight the select file field in the Pilot Profile Importing Box.

b) Turn the small **FMS** Knob to display the pilot profile list and highlight the desired profile to import and press the **ENT** Key.

c) With 'IMPORT' highlighted, press the **ENT** Key.

4) "Pilot profile import succeeded." is shown in the import results box. Press the **ENT** Key. The imported profile becomes the active Pilot Profile.

Exporting a Profile

1) Insert the SD card for storing the Pilot Profile into the top card slot on the MFD.

2) Use the **FMS** Knob to select the AUX - SYSTEM SETUP 1 Page.

3) Activate the desired Pilot Profile to export. Only the active Pilot Profile can be exported.

4) Press the **EXPORT** softkey.

5) With 'EXPORT' highlighted press the **ENT** Key.

6) "Pilot profile export succeeded." is shown in the export results box. Press the **ENT** Key to exit the Pilot Profile Exporting Box.

ELECTRONIC STABILITY & PROTECTION (ESP™)

ESP engages when the aircraft exceeds one or more conditions (pitch, roll, Vmo and/or Mmo) beyond the normal flight parameters. Enhanced stability for each condition is provided by applying a force to the appropriate control surface to return the aircraft to the normal flight envelope. This is perceived by the pilot as resistance to control movement in the undesired direction when the aircraft approaches a steep attitude or high airspeed.

As the aircraft deviates further from the normal attitude and/or airspeed range continues to increase, the force increases (up to an established maximum) to encourage control movement in the direction necessary to return to the normal attitude and/or airspeed range. Except in the case of high airspeed, when maximum force is reached, force remains constant up to the maximum engagement limit. Above the maximum engagement limit, forces are no longer applied. There is no maximum engagement related to a high airspeed condition.

When ESP has been engaged for more than ten seconds (cumulative; not necessarily consecutive seconds) of a 20-second interval, the autopilot is automatically engaged with the flight director in Level Mode in the pitch and/or roll axis, bringing the aircraft into level flight. An aural "Engaging Autopilot" alert is played and the flight director mode annunciation will indicate 'LVL' for vertical and lateral modes.

The pilot can interrupt ESP by pressing and holding either the Control Wheel Steering (**CWS**) or Autopilot Disconnect (**AP/YD DISC TRIM INTRPT**) switch. Upon releasing the **CWS** or **AP/YD DISC TRIM INTRPT** switch, ESP force will again be applied, provided aircraft attitude and/or airspeed are within their respective engagement limits. ESP can also be overridden by overpowering the servo's mechanical torque limit.

ESP can be enabled or disabled on the AUX-SYSTEM SETUP 2 Page on the MFD.

To enable or disable ESP:

1) Turn the large **FMS** Knob to select the AUX Page Group.
2) Turn the small **FMS** Knob to select the System Setup Page.
3) If necessary, select the **SETUP 2** Softkey to display the AUX-SYSTEM SETUP 2 Page. If the AUX-SYSTEM SETUP 2 is already displayed, proceed to step 4.
4) Press the **FMS** Knob to activate the cursor.
5) Turn the large **FMS** Knob to place the cursor in the STABILITY & PROTECTION field.
6) Turn the small **FMS** Knob to select 'ENABLE' or 'DISABLE'.
7) Press the **FMS** Knob to remove the cursor.

Roll Engagement

Roll Limit Indicators are displayed on the roll scale at 45° right and left, indicating where ESP will engage. As roll attitude exceeds 45°, ESP will engage and the on-side Roll Limit Indicator will move to 30°. The Roll Limit Indicator is now showing where ESP will disengage as roll attitude decreases to within the desirable roll attitude range.

Once engaged, ESP force will be applied between 30° and 75°. The force increases as roll attitude increases and decreases as roll attitude decreases. The applied force is intended to encourage pilot input that returns the airplane to a more normal roll attitude. As roll attitude decreases, ESP will disengage at 30°.

ESP is automatically disengaged if the aircraft reaches the autopilot roll engagement attitude limit of 75°.

Pitch Engagement

ESP engages at 20° nose-up and 17° nose-down. Once ESP is engaged, it will apply opposing force between 15° and 50° nose-up and between 12° and 50° nose-down. Maximum opposing force is applied between 25° and 50° nose-up and between 22° and 50° nose-down.

The opposing force increases or decreases depending on the pitch angle and the direction of pitch travel. This force is intended to encourage movement in the pitch axis in the direction of the normal pitch attitude range for the aircraft.

There are no indications marking the pitch ESP engage and disengage limits in these nose-up/nose-down conditions.

High Airspeed Protection

Exceeding Vmo or Mmo will result in ESP applying force to raise the nose of the aircraft. When the high airspeed condition is remedied, ESP force is no longer applied.

Blank Page

ANNUNCIATIONS & ALERTS

WARNING ANNUNCIATION

Annunciation Window Text	Alerts Window Text	Aural Alert
UNDERSPEED PROTECT ACTIVE	UNDERSPEED - PROTECT ACTIVE -	"Airspeed" is heard once when an altitude-not-critcal flight director mode is active. "Airspeed" repeats every five seconds when an altitude-critical flight director mode is active.

ADVISORY ANNUNCIATIONS

Annunciation Window Text	Alerts Window Text
AVN FAN 1 FAIL	AVN FAN 1 FAIL - Avionics cooling fan #1 is inoperative.
AVN FAN 2 FAIL	AVN FAN 2 FAIL - Avionics cooling fan #2 is inoperative.
PFD 1 FAN FAIL	PFD 1 FAN FAIL - PFD #1 cooling fan is inoperative.
PFD 2 FAN FAIL	PFD FAN FAIL - PFD #2 cooling fan is inoperative.
MFD FAN FAIL	MFD FAN FAIL - MFD cooling fan is inoperative.

MESSAGE ADVISORY ALERTS

Alerts Window Message
ESP DEGRADE – ESP AOA mode is inoperative.*
ESP DEGRADE – ESP IAS mode is inoperative.*
ESP FAIL – ESP is inoperative.*
ESP OFF – ESP selected off.*
ESP CONFIG – ESP config error. Config service req'd.*
TAWS GEAR FAULT – Landing Gear detected in the DOWN position.
TAWS FLAP FAULT – Flaps detected in the LDG position.
WOW FAULT – Miscompare between weight on wheels inputs.
WOW INVALID – Weight on wheels inputs invalid.
YD OFF – AP engaged without Yaw Damper.

* Available with ESP™ option only

COMPARATOR ANNUNCIATIONS

Comparator Window Text	Condition
ALT MISCOMP	Difference in altitude sensors is ≥ 200 ft.
IAS MISCOMP	If both airspeed sensors detect < 35 knots, this is inhibited.
	If either airspeed sensor detects ≥ 35 knots, and the difference in sensors is > 10 kts.
	If either airspeed sensor detects ≥ 80 knots, and the difference in sensors is > 7 kts.
HDG MISCOMP	Difference in heading sensors is > 6 degrees.
PIT MISCOMP	Difference in pitch sensors is > 5 degrees.
ROL MISCOMP	Difference in roll sensors is > 6 degrees.
ALT NO COMP	No data from one or both altitude sensors.
IAS NO COMP	No data from one or both airspeed sensors.
HDG NO COMP	No data from one or both heading sensors.
PIT NO COMP	No data from one or both pitch sensors.
ROL NO COMP	No data from one or both roll sensors..

REVERSIONARY SENSOR ANNUNCIATIONS

Reversionary Sensor Window Text	Condition
BOTH ON ADC1	Both PFDs are displaying data from the number one Air Data Computer.
BOTH ON ADC2	Both PFDs are displaying data from the number two Air Data Computer.
BOTH ON AHRS1	Both PFDs are displaying data from the number one Attitude & Heading Reference System.
BOTH ON AHRS2	Both PFDs are displaying data from the number two Attitude & Heading Reference System.
BOTH ON GPS1	Both PFDs are displaying data from the number one GPS receiver.
BOTH ON GPS2	Both PFDs are displaying data from the number two GPS receiver.
USING ADC1	PFD2 is displaying data from the #1 Air Data Computer.
USING ADC2	PFD1 is displaying data from the #2 Air Data Computer.
USING AHRS1	PFD2 is displaying data from the #1 AHRS.

Reversionary Sensor Window Text	Condition
USING AHRS2	PFD1 is displaying data from the #2 AHRS.
USING GPS1	PFD2 is displaying data from the #1 GPS.
USING GPS2	PFD1 is displaying data from the #2 GPS.

AFCS ALERTS

Condition	Annunciation	Description
Pitch Failure	PTCH	Pitch axis control failure.
Roll Failure	ROLL	Roll axis control failure.
Pitch Trim Axis Control Failure	PTRM	If annunciated when AP is engaged, a failure has occurred in the pitch trim system.
System Failure	AFCS	AP and MET are unavailable. FD may still be available.
Yaw Damper/ Rudder Boost Failure	YAW	Yaw axis control failure.
Elevator Mistrim Up	↑ELE	A condition has developed causing the pitch servo to provide a sustained force in the nose up direction.
Elevator Mistrim Down	↓ELE	A condition has developed causing the pitch servo to provide a sustained force in the nose down direction.
Aileron Mistrim Left	←AIL	A condition has developed causing the roll servo to provide a sustained left force.
Aileron Mistrim Right	AIL→	A condition has developed causing the roll servo to provide a sustained right force.
Rudder Mistrim Left	←RUD	A condition has developed causing the yaw servo to provide a sustained force.
Rudder Mistrim Right	RUD→	A condition has developed causing the yaw servo to provide a sustained force.
Preflight Test	PFT	Performing preflight system test. Upon completion of the test, the aural alert will be heard.
	PFT	Preflight system test has failed.

TAWS-A ALERTS

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Voice Message
Reduced Required Terrain Clearance Warning (RTC)	PULL UP	TERRAIN - PULL-UP or TERRAIN AHEAD - PULL-UP	"Terrain, Terrain; Pull Up, Pull Up" or "Terrain Ahead, Pull Up; Terrain Ahead, Pull Up"
Imminent Terrain Impact Warning (ITI)	PULL UP	TERRAIN AHEAD - PULL-UP or TERRAIN - PULL-UP	Terrain Ahead, Pull Up; Terrain Ahead, Pull Up" or "Terrain, Terrain; Pull Up, Pull Up"
Reduced Required Obstacle Clearance Warning (ROC)	PULL UP	OBSTACLE - PULL-UP or OBSTACLE AHEAD - PULL-UP	"Obstacle, Obstacle; Pull Up, Pull Up" or "Obstacle Ahead, Pull Up; Obstacle Ahead, Pull Up"
Imminent Obstacle Impact Warning (IOI)	PULL UP	OBSTACLE AHEAD - PULL-UP or OBSTACLE - PULL-UP	"Obstacle Ahead, Pull Up; Obstacle Ahead, Pull Up" or "Obstacle, Obstacle; Pull Up, Pull Up"
Excessive Descent Rate Warning (EDR)	PULL UP	PULL-UP	"<whoop><whoop> Pull Up"
Excessive Closure Rate Warning (ECR)	PULL UP	PULL-UP	"<whoop><whoop> Pull Up"
Reduced Required Terrain Clearance Caution (RTC)	TERRAIN	CAUTION - TERRAIN or TERRAIN AHEAD	"Caution, Terrain; Caution, Terrain" or "Terrain Ahead; Terrain Ahead"
Imminent Terrain Impact Caution (ITI)	TERRAIN	TERRAIN AHEAD or CAUTION - TERRAIN	"Terrain Ahead; Terrain Ahead" or "Caution, Terrain; Caution, Terrain"
Reduced Required Obstacle Clearance Caution (ROC)	TERRAIN	CAUTION - OBSTACLE or OBSTACLE AHEAD	"Caution, Obstacle; Caution, Obstacle" or "Obstacle Ahead; Obstacle Ahead"

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Voice Message
Imminent Obstacle Impact Caution (IOI)	TERRAIN	OBSTACLE AHEAD or CAUTION – OBSTACLE	"Obstacle Ahead; Obstacle Ahead" or "Caution, Obstacle; Caution, Obstacle"
Premature Descent Alert Caution (PDA)	TERRAIN	TOO LOW – TERRAIN	"Too Low, Terrain"
Excessive Descent Rate Caution (EDR)	TERRAIN	SINK RATE	"Sink Rate"
Excessive Closure Rate Caution (ECR)	TERRAIN	TERRAIN	"Terrain, Terrain"
Negative Climb Rate Caution (NCR)	TERRAIN	DON'T SINK or TOO LOW – TERRAIN	"Don't Sink" or "Too Low, Terrain"
Flight Into Terrain High Speed Caution (FIT)	TERRAIN	TOO LOW – TERRAIN	"Too Low, Terrain"
Flight Into Terrain Gear Caution (FIT)	TERRAIN	TOO LOW – GEAR	"Too Low, Gear"
Flight Into Terrain Flaps Caution (FIT)	TERRAIN	TOO LOW – FLAPS	"Too Low, Flaps"
Flight Into Terrain Takeoff Caution (FIT)	TERRAIN	TOO LOW – TERRAIN	"Too Low, Terrain"
Glide Slope Deviation Caution (GSD) (depends on approach type)	GLIDESLOPE or GLIDEPATH	GLIDESLOPE or GLIDEPATH	"Glide Slope" or "Glide Path"
Altitude Voice Callout (VCO) (all are configurable, except "Five-Hundred")	None	None	"Five-Hundred" "Four-Hundred" "Three-Hundred" "Two-Hundred" "One-Hundred"

TAWS-A System Status Annunciations

Alert Type	PFD/MFD TAWS-A Page Annunciation	Additional TAWS-A Page Annunciation	Voice Message
TAWS System Fail	TAWS FAIL	TAWS FAIL	"TAWS System Failure"
System Test in progress	TAWS TEST	TAWS TEST	None
System Test pass	None	None	"TAWS System Test OK"
MFD Terrain or Obstacle database unavailable or invalid. TAWS operating with PFD Terrain or Obstacle databases	None	TERRAIN DATABASE FAILURE	None
GPWS System Fail, Radar Altimeter invalid, Altitude or Vertical Speed unavailable	GPWS FAIL	None	"GPWS System Failure"
No GPS position, excessively degraded GPS signal	TAWS N/A	NO GPS POSITION	"TAWS Not Available" "TAWS Available" when sufficient GPS signal is received.
Out of database coverage area	TAWS N/A	None	"TAWS Not Available" "TAWS Available" when aircraft enters database coverage area.

TAWS-A Alert Type Availability Under Various Conditions

TAWS-A Status Annunciation Displayed	TAWS-A Alert Type Available										
	RTC	ITI	ROC	IOI	PDA	EDR	ECR	NCR	FIT	GSD	VCO
TAWS TEST	No	No	No	No	No	No	No	No	No	No	No
TAWS N/A	No	No	No	No	No	Yes	Yes	Yes	Yes	*No	**Yes
TAWS FAIL	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	**Yes
TAWS INH	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
GPWS FAIL	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	**Yes
GS INH	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
GP INH	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
FLAP OVR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	#Yes	Yes	Yes

* GSD alert will be available if a valid ILS is being used for navigation, even if no valid GPS signal is being received.

** VCO alerts are not issued if both TAWS and GPWS systems have failed or are not available.

\# Only the portions of FIT Alerting based on flap position are disabled when FLAP OVR annunciation is displayed.

TAWS-B ALERTS

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Voice Message
Reduced Required Terrain Clearance Warning (RTC)	PULL UP	TERRAIN - PULL-UP or TERRAIN AHEAD - PULL-UP	"Terrain, Terrain; Pull Up, Pull Up" or "Terrain Ahead, Pull Up; Terrain Ahead, Pull Up"
Imminent Terrain Impact Warning (ITI)	PULL UP	TERRAIN AHEAD - PULL-UP or TERRAIN - PULL-UP	Terrain Ahead, Pull Up; Terrain Ahead, Pull Up" or "Terrain, Terrain; Pull Up, Pull Up"

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Voice Message
Reduced Required Obstacle Clearance Warning (ROC)	PULL UP	OBSTACLE - PULL-UP or OBSTACLE AHEAD - PULL-UP	"Obstacle, Obstacle; Pull Up, Pull Up" or "Obstacle Ahead, Pull Up; Obstacle Ahead, Pull Up"
Imminent Obstacle Impact Warning (IOI)	PULL UP	OBSTACLE AHEAD - PULL-UP or OBSTACLE - PULL-UP	"Obstacle Ahead, Pull Up; Obstacle Ahead, Pull Up" or "Obstacle, Obstacle; Pull Up, Pull Up"
Excessive Descent Rate Warning (EDR)	PULL UP	PULL-UP	"Pull Up"
Reduced Required Terrain Clearance Caution (RTC)	TERRAIN	CAUTION - TERRAIN or TERRAIN AHEAD	"Caution, Terrain; Caution, Terrain" or "Terrain Ahead; Terrain Ahead"
Imminent Terrain Impact Caution (ITI)	TERRAIN	TERRAIN AHEAD or CAUTION - TERRAIN	"Terrain Ahead; Terrain Ahead" or "Caution, Terrain; Caution, Terrain"
Reduced Required Obstacle Clearance Caution (ROC)	TERRAIN	CAUTION - OBSTACLE or OBSTACLE AHEAD	"Caution, Obstacle; Caution, Obstacle" or "Obstacle Ahead; Obstacle Ahead"
Imminent Obstacle Impact Caution (IOI)	TERRAIN	OBSTACLE AHEAD or CAUTION - OBSTACLE	"Obstacle Ahead; Obstacle Ahead" or "Caution, Obstacle; Caution, Obstacle"
Premature Descent Alert Caution (PDA)	TERRAIN	TOO LOW - TERRAIN	"Too Low, Terrain"
Excessive Descent Rate Caution (EDR)	TERRAIN	SINK RATE	"Sink Rate"
Negative Climb Rate Caution (NCR)	TERRAIN	DON'T SINK or TOO LOW - TERRAIN	"Don't Sink" or "Too Low, Terrain"

TAWS-B System Status Annunciations

Alert Type	PFD/MFD TAWS-A Page Annunciation	Additional TAWS-A Page Annunciation	Voice Message
TAWS System Fail	TAWS FAIL	TAWS FAIL	"TAWS System Failure"
System Test in progress	TAWS TEST	TAWS TEST	None
System Test pass	None	None	"TAWS System Test OK"
MFD Terrain or Obstacle database unavailable or invalid. TAWS operating with PFD Terrain or Obstacle databases	None	TERRAIN DATABASE FAILURE	None
No GPS position, excessively degraded GPS signal	TAWS N/A	NO GPS POSITION	"TAWS Not Available" "TAWS Available" when sufficient GPS signal is received.
Out of database coverage area	TAWS N/A	None	"TAWS Not Available" "TAWS Available" when aircraft enters database coverage area.

ADDITIONAL VOICE ALERTS

Voice Alert	Description
"Minimums"	The aircraft has descended below the preset minimum descent altitude or decision altitude.
"Vertical track"	The aircraft is one minute from Top of Descent. Issued only when vertical navigation is enabled.
"Airspeed"	The aircraft is in an underspeed condition. See the AFCS section for more details.
"Engaging autopilot"	The ESP system is engaging the autopilot. See the AFCS section for more details.
"Traffic"	Played when a Traffic Advisory (TA) is issued with the TIS system, the optional GTS 800/820/825 TAS system, or the optional GTS 850/855 TCAS I system. See the Hazard Avoidance section for additional details on GTS 820/825/850/855 voice alerts.
"TIS Not Available"	The aircraft is outside the Traffic Information Service (TIS) coverage area.
"Traffic, Traffic" "Traffic"	Played when a Traffic Advisory (TA) is issued with the optional SKY 497/SKY899 TAS system, or the optional KTA 870 TAS system. See the Skywatch PG or KTA 870 PG for additional details on voice alerts. Played for each subsequent TA (KTA 870 only).
"Traffic Advisory System Test Passed" "SKYWATCH System Test Passed" "TAS System Test OK" "TAS System Test Passed" "TCAS System Test Passed" "TCAS One System Test Passed" "TCAS Two System Test Passed" "TCAS System Test Passed"	Played when the optional traffic system passes a pilot-initiated self test. - SKY 497 TAS - SKY 899 TAS - KTA 870 TAS - GTS 800/820/825 TAS - GTS 850 TCAS I - GTS 855 TCAS I - GTS 8000 TCAS II - TCAS II

Voice Alert	Description
"Traffic Advisory System Test Failed" "SKYWATCH System Test Failed" "TAS System Test Fail" "TAS System Test Failed" "TCAS One System Test Failed" "TCAS Two System Test Failed" "TCAS System Test Failed"	Played when the optional traffic system fails a pilot-initiated self test. - SKY 497 TAS - SKY 899 TAS - KTA 870 TAS - GTS 800/820/825 TAS - GTS 850/855 TCAS I - GTS 8000 TCAS II - TCAS II
"One o'clock" through "Twelve o'clock" or "No Bearing"	Intruder bearing (GTS 800/820/825/850/855 only)
"High", "Low", "Same Altitude" (if within 200 feet of own altitude), or "Altitude not available"	Intruder relative altitude (GTS 800/820/825/850/855 only)
"Less than one mile", "One Mile" through "Ten Miles", or "More than ten miles"	Intruder distance (GTS 800/820/825/850/855 only)

MFD & PFD MESSAGE ADVISORIES

Message	Comments
DATA LOST – Pilot stored data was lost. Recheck settings.	The pilot profile data was lost. System reverts to default pilot profile and settings. The pilot may reconfigure the MFD & PFDs with preferred settings, if desired.
XTALK ERROR – A flight display crosstalk error has occurred.	The MFD and PFDs are not communicating with each other. The system should be serviced.
PFD1 SERVICE – PFD1 needs service. Return unit for repair.	The PFD and/or MFD self-test has detected a problem. The system should be serviced.
PFD2 SERVICE – PFD2 needs service. Return unit for repair.	
MFD1 SERVICE – MFD1 needs service. Return unit for repair.	

Message	Comments
PFD1 MANIFEST – PFD1 software mismatch, communication halted.	The PFD and/or MFD has incorrect software installed. The system should be serviced.
PFD2 MANIFEST – PFD2 software mismatch, communication halted.	
MFD1 MANIFEST – MFD1 software mismatch, communication halted.	
PFD1 CONFIG – PFD1 config error. Config service req'd.	The PFD configuration settings do not match backup configuration memory. The system should be serviced.
PFD2 CONFIG – PFD2 config error. Config service req'd.	
MFD1 CONFIG – MFD1 config error. Config service req'd.	The MFD configuration settings do not match backup configuration memory. The system should be serviced.
PFD1 SOFTWARE – PFD1 mismatch, communication halted.	The specified GDU has different software versions installed. The system should be serviced.
PFD2 SOFTWARE – PFD2 mismatch, communication halted.	
MFD1 SOFTWARE – MFD1 mismatch, communication halted.	
PFD1 COOLING – PFD1 has poor cooling. Reducing power usage.	The PFD and/or MFD is overheating and is reducing power consumption by dimming the display. If problem persists, the system should be serviced.
PFD2 COOLING – PFD2 has poor cooling. Reducing power usage.	
MFD1 COOLING – MFD1 has poor cooling. Reducing power usage.	
PFD1 KEYSTK – PFD1 [key name] Key is stuck.	A key is stuck on the PFD and/or MFD bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists.
PFD2 KEYSTK – PFD2 [key name] Key is stuck.	
MFD1 KEYSTK – MFD [key name] Key is stuck.	

Message	Comments
CNFG MODULE – PFD1 configuration module is inoperative.	The PFD1 configuration module backup memory has failed. The system should be serviced.
PFD1 VOLTAGE – PFD1 has low voltage. Reducing power usage	The PFD1 voltage is low. The system should be serviced.
PFD2 VOLTAGE – PFD2 has low voltage. Reducing power usage	The PFD2 voltage is low. The system should be serviced.
MFD1 VOLTAGE – MFD1 has low voltage. Reducing power usage	The MFD voltage is low. The system should be serviced.
[PFD1, PFD2, or MFD1] BKLT CAL INV – calibration lost or mismatch. Return for repair.	The PFD1, PFD2 and/or MFD backlight calibration cannot be found or is invalid. The system should be serviced.

DATABASE MESSAGE ADVISORIES

Message	Comments
MFD1 DB ERR – MFD1 navigation database error exists.	The MFD and/or PFD detected a failure in the navigation database. Attempt to reload the navigation database. If problem persists, the system should be serviced.
PFD1 DB ERR – PFD1 navigation database error exists.	
PFD2 DB ERR – PFD2 navigation database error exists.	
MFD1 DB ERR – MFD1 basemap database error exists.	The MFD and/or PFD detected a failure in the basemap database.
PFD1 DB ERR – PFD1 basemap database error exists.	
PFD2 DB ERR – PFD2 basemap database error exists.	
MFD1 DB ERR – MFD1 terrain database error exists.	The MFD and/or PFD detected a failure in the terrain database. Ensure that the terrain card is properly inserted in display. Replace terrain card. If problem persists, the system should be serviced.
PFD1 DB ERR – PFD1 terrain database error exists.	
PFD2 DB ERR – PFD2 terrain database error exists.	

Message	Comments
MFD1 DB ERR – MFD1 terrain database missing.	The terrain database is present on another LRU, but is missing on the specified LRU.
PFD1 DB ERR – PFD1 terrain database missing.	
PFD2 DB ERR – PFD2 terrain database missing.	
MFD1 DB ERR – MFD1 obstacle database error exists.	The MFD and/or PFD detected a failure in the obstacle database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
PFD1 DB ERR – PFD1 obstacle database error exists.	
PFD2 DB ERR – PFD2 obstacle database error exists.	
MFD1 DB ERR – MFD1 obstacle database missing.	The obstacle database is present on another LRU, but is missing on the specified LRU.
PFD1 DB ERR – PFD1 obstacle database missing.	
PFD2 DB ERR – PFD2 obstacle database missing.	
MFD1 DB ERR – MFD1 airport terrain database error exists.	The MFD and/or PFD detected a failure in the airport terrain database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
PFD1 DB ERR – PFD1 airport terrain database error exists.	
PFD2 DB ERR – PFD2 airport terrain database error exists.	
MFD1 DB ERR – MFD1 airport terrain database missing.	The airport terrain database is present on another LRU, but is missing on the specified LRU.
PFD1 DB ERR – PFD1 airport terrain database missing.	
PFD2 DB ERR – PFD2 airport terrain database missing.	

Message	Comments
MFD1 DB ERR – MFD1 Safe Taxi database error exists.	The MFD and/or PFD detected a failure in the Safe Taxi database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
PFD1 DB ERR – PFD1 Safe Taxi database error exists.	
PFD2 DB ERR – PFD2 Safe Taxi database error exists.	
MFD1 DB ERR – MFD1 Chartview database error exists.	The MFD and/or PFDs detected a failure in the ChartView database (optional feature). Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
MFD1 DB ERR – MFD1 FliteCharts database error exists.	The MFD and/or PFDs detected a failure in the FliteCharts database (optional feature). Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
MFD1 DB ERR – MFD1 Airport Directory database error exists.	The MFD detected a failure in the Airport Directory database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
DB MISMATCH – Navigation database mismatch. Xtalk is off.	The PFDs and MFD have different navigation database versions or regions installed. Crossfill is off. Check the AUX-SYSTEM STATUS Page to determine versions or regions. Also, check the AUX-SYSTEM STATUS Page for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.
DB MISMATCH – Standby Navigation database mismatch.	The PFDs and MFD have different standby navigation database versions or regions installed. Check the AUX-SYSTEM STATUS Page to determine versions or regions. Also, check the AUX-SYSTEM STATUS Page for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.

Message	Comments
DB MISMATCH – Terrain database mismatch.	The PFDs and MFD have different terrain database versions or regions installed. Check the AUX-SYSTEM STATUS Page to determine versions or regions. Also, check the AUX-SYSTEM STATUS Page for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.
DB MISMATCH – Obstacle database mismatch.	The PFDs and MFD have different obstacle database versions or regions installed. Check the AUX-SYSTEM STATUS Page to determine versions or regions. Also, check the AUX-SYSTEM STATUS Page for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.
DB MISMATCH – Airport Terrain database mismatch.	The PFDs and MFD have different airport terrain database versions or regions installed. Check the AUX-SYSTEM STATUS Page to determine versions or regions. Also, check the AUX-SYSTEM STATUS Page for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.
NAV DB UPDATED – Active navigation database updated.	System has updated the active navigation database from the standby navigation database.
TERRAIN DSP – [PFD1, PFD2 or MFD1] Terrain awareness display unavailable.	One of the terrain, airport terrain, or obstacle databases required for TAWS in the specified PFD or MFD is missing or invalid.

GMA 1347D MESSAGE ADVISORIES

Message	Comments
GMA1 FAIL – GMA1 is inoperative.	The audio panel self-test has detected a failure. The audio panel is unavailable. The system should be serviced.
GMA2 FAIL – GMA2 is inoperative.	
GMA XTALK – GMA crosstalk error has occurred.	An error has occurred in transferring data between the two GMAs. The system should be serviced.

Message	Comments
GMA1 CONFIG – GMA1 config error. Config service req'd.	The audio panel configuration settings do not match backup configuration memory. The system should be serviced.
GMA2 CONFIG – GMA2 config error. Config service req'd.	
GMA1 MANIFEST – GMA1 software mismatch, communication halted.	The audio panel has incorrect software installed. The system should be serviced.
GMA2 MANIFEST – GMA2 software mismatch, communication halted.	
GMA1 SERVICE – GMA1 needs service. Return unit for repair.	The audio panel self-test has detected a problem in the unit. Certain audio functions may still be available, and the audio panel may still be usable. The system should be serviced when possible.
GMA2 SERVICE – GMA2 needs service. Return unit for repair.	

GIA 63W MESSAGE ADVISORIES

Message	Comments
GIA1 CONFIG – GIA1 config error. Config service req'd.	The GIA1 and/or GIA2 configuration settings do not match backup configuration memory. The system should be serviced.
GIA2 CONFIG – GIA2 config error. Config service req'd.	
GIA1 CONFIG – GIA1 audio config error. Config service req'd.	The GIA1 and/or GIA2 have an error in the audio configuration. The system should be serviced.
GIA2 CONFIG – GIA2 audio config error. Config service req'd.	
GIA1 COOLING – GIA1 temperature too low.	The GIA1 and/or GIA2 temperature is too low to operate correctly. Allow units to warm up to operating temperature.
GIA2 COOLING – GIA2 temperature too low.	
GIA1 COOLING – GIA1 over temperature.	The GIA1 and/or GIA2 temperature is too high. If problem persists, the system should be serviced.
GIA2 COOLING – GIA2 over temperature.	

Message	Comments
GIA1 SERVICE – GIA1 needs service. Return the unit for repair.	The GIA1 and/or GIA2 self-test has detected a problem in the unit. The system should be serviced.
GIA2 SERVICE – GIA2 needs service. Return the unit for repair.	
HW MISMATCH – GIA hardware mismatch. GIA1 communication halted.	A GIA mismatch has been detected, where only one is SBAS capable.
HW MISMATCH – GIA hardware mismatch. GIA2 communication halted.	
GIA1 MANIFEST – GIA1 software mismatch, communication halted.	The GIA1 and/or GIA 2 has incorrect software installed. The system should be serviced.
GIA2 MANIFEST – GIA2 software mismatch, communication halted.	
GFC MANIFEST – GFC software mismatch, communication halted.	Incorrect servo software is installed, or gain settings are incorrect.
COM1 MANIFEST– COM1 software mismatch, communication halted.	COM1 and/or COM2 software mismatch. The G1000 system should be serviced.
COM2 MANIFEST– COM2 software mismatch, communication halted.	
NAV1 MANIFEST– NAV1 software mismatch, communication halted.	NAV1 and/or NAV2 software mismatch. The G1000 system should be serviced.
NAV2 MANIFEST– NAV2 software mismatch, communication halted.	
COM1 CONFIG – COM1 config error. Config service req'd.	COM1 and/or COM2 configuration settings do not match backup configuration memory. The G1000 system should be serviced.
COM2 CONFIG– COM2 config error. Config service req'd.	
COM1 TEMP – COM1 over temp. Reducing transmitter power.	The system has detected an over temperature condition in COM1 and/or COM2. The transmitter is operating at reduced power. If the problem persists, the system should be serviced.
COM2 TEMP – COM2 over temp. Reducing transmitter power.	

Message	Comments
COM1 SERVICE – COM1 needs service. Return unit for repair.	The system has detected a failure in COM1 and/or COM2. COM1 and/or COM2 may still be usable. The system should be serviced when possible.
COM2 SERVICE – COM2 needs service. Return unit for repair.	
COM1 PTT – COM1 push-to-talk key is stuck.	The COM1 and/or COM2 external push-to-talk switch is stuck in the enable (or "pressed") position. Press the PTT switch again to cycle its operation. If the problem persists, the system should be serviced.
COM2 PTT – COM2 push-to-talk key is stuck.	
COM1 RMT XFR – COM1 remote transfer key is stuck.	The COM1 and/or COM2 transfer switch is stuck in the enabled (or "pressed") position. Press the transfer switch again to cycle its operation. If the problem persists, the system should be serviced.
COM2 RMT XFR – COM2 remote transfer key is stuck.	
RAIM UNAVAIL – RAIM is not available from FAF to MAP waypoints.	GPS satellite coverage is insufficient to perform Receiver Autonomous Integrity Monitoring (RAIM) from the FAF to the MAP waypoints.
LOI – GPS integrity lost. Crosscheck with other NAVS.	GPS integrity is insufficient for the current phase of flight.
GPS NAV LOST – Loss of GPS navigation. Insufficient satellites.	Loss of GPS navigation due to insufficient satellites.
GPS NAV LOST – Loss of GPS navigation. Position error.	Loss of GPS navigation due to position error.
GPS NAV LOST – Loss of GPS navigation. GPS fail.	Loss of GPS navigation due to GPS failure.
ABORT APR – Loss of GPS navigation. Abort approach.	Abort approach due to loss of GPS navigation.
APR DWNGRADE – Approach downgraded.	Vertical guidance generated by SBAS is unavailable, use LNAV only minimums.
TRUE APR – True north approach. Change HDG reference to TRUE.	Displayed after passing the first waypoint of a true north approach when the nav angle is set to 'AUTO'.

Message	Comments
GPS1 FAIL – GPS1 is inoperative.	A failure has been detected in GPS receiver #1 and/or GPS receiver #2. The system should be serviced.
GPS2 FAIL – GPS2 is inoperative.	
GPS1 SERVICE – GPS1 needs service. Return unit for repair.	A failure has been detected in the GPS1 and/ or GPS2 receiver. The receiver may still be available. The system should be serviced.
GPS2 SERVICE – GPS2 needs service. Return unit for repair.	
NAV1 SERVICE – NAV1 needs service. Return unit for repair.	A failure has been detected in the NAV1 and/ or NAV2 receiver. The receiver may still be available. The system should be serviced.
NAV2 SERVICE – NAV2 needs service. Return unit for repair.	
NAV1 RMT XFR – NAV1 remote transfer key is stuck.	The remote NAV1 and/or NAV2 transfer switch is stuck in the enabled (or "pressed") state. Press the transfer switch again to cycle its operation. If the problem persists, the system should be serviced.
NAV2 RMT XFR – NAV2 remote transfer key is stuck.	
G/S1 FAIL – G/S1 is inoperative.	A failure has been detected in glideslope receiver 1 and/or receiver 2. The system should be serviced.
G/S2 FAIL – G/S2 is inoperative.	
G/S1 SERVICE – G/S1 needs service. Return unit for repair.	A failure has been detected in glideslope receiver 1 and/or receiver 2. The receiver may still be available. The system should be serviced when possible.
G/S2 SERVICE – G/S2 needs service. Return unit for repair.	
UNABLE RNP – Estimated position error exceeds RNP.	The estimated GPS position error exceeds the RNP limits. Check GPS sensors.
UNABLE RNP APR – GPS integrity lost. Check GPS sensors.	The estimated GPS position error exceeds the requirements for the current approach. Check GPS sensor
APR ADVISORY – SBAS VNAV not available. Using Baro VNAV.	SBAS VNAV not available. Check GPS sensor.

GSD 41 MESSAGE ADVISORIES (OPTIONAL)

Message	Comments
GSD1 CONFIG – GSD1 config error. Config service req'd.	GSD1 and the CDU have different copies of the GSD1 configuration.
GSD1 COOLING – GSD1 temperature too low.	GSD1 is reporting a low temperature condition.
GSD1 SERVICE – GSD1 needs service. Return unit for repair.	GSD1 is reporting an internal error condition. The GSD may still be usable.
GSD1 MANIFEST – GSD1 software mismatch. Communication halted.	GSD1 has incorrect software installed. The system should be serviced.

GEA 71 MESSAGE ADVISORIES

Message	Comments
GEA1 CONFIG – GEA1 config error. Config service req'd.	The GEA1 configuration settings do not match those of backup configuration memory. The system should be serviced.
GEA2 CONFIG – GEA2 config error. Config service req'd.	The GEA2 configuration settings do not match those of backup configuration memory. The system should be serviced.
GEA1 MANIFEST – GEA1 software mismatch, communication halted.	The #1 GEA 71 has incorrect software installed. The system should be serviced.
GEA2 MANIFEST – GEA2 software mismatch, communication halted.	The #2 GEA 71 has incorrect software installed. The system should be serviced.

GTX 33/33D/33ES/3000 MESSAGE ADVISORIES

Message	Comments
XPDR1 CONFIG – XPDR1 config error. Config service req'd.	The transponder configuration settings do not match those of backup configuration memory. The system should be serviced.
XPDR2 CONFIG – XPDR2 config error. Config service req'd.	
GTX1 MANIFEST – GTX1 software mismatch, communication halted.	The transponder has incorrect software installed. The system should be serviced.
GTX2 MANIFEST – GTX2 software mismatch, communication halted.	

Message	Comments
XPDR1 SERVICE – XPDR1 needs service. Return unit for repair.	The #1 transponder should be serviced when possible.
XPDR2 SERVICE – XPDR2 needs service. Return unit for repair.	The #2 transponder should be serviced when possible.
XPDR1 FAIL – XPDR1 is inoperative.	There is no communication with the #1 transponder.
XPDR2 FAIL – XPDR2 is inoperative.	There is no communication with the #2 transponder.
XPDR1 ADS-B FAIL – XPDR1 unable to transmit ADS-B messages.	ADS-B is inoperative. Other transponder functions may be available. Transponder should be serviced when possible
XPDR2 ADS-B FAIL – XPDR2 unable to transmit ADS-B messages.	

GRS 77/7800 MESSAGE ADVISORIES

Message	Comments
AHRS1 TAS – AHRS1 not receiving valid airspeed.	The #1 AHRS is not receiving true airspeed from the air data computer. The AHRS relies on GPS information to augment the lack of airspeed. The system should be serviced.
AHRS2 TAS – AHRS2 not receiving valid airspeed.	The #2 AHRS is not receiving true airspeed from the air data computer. The AHRS relies on GPS information to augment the lack of airspeed. The system should be serviced.
AHRS1 GPS – AHRS1 using backup GPS source.	The #1 AHRS is using the backup GPS path. Primary GPS path has failed. The system should be serviced when possible.
AHRS2 GPS – AHRS2 using backup GPS source.	The #2 AHRS is using the backup GPS path. Primary GPS path has failed. The system should be serviced when possible.
AHRS1 GPS – AHRS1 not receiving any GPS information.	The #1 AHRS is not receiving any or any useful GPS information. Check AFMS limitations. The system should be serviced.

Message	Comments
AHRS2 GPS – AHRS2 not receiving any GPS information.	The #2 AHRS is not receiving any or any useful GPS information. Check AFMS limitations. The system should be serviced.
AHRS1 GPS – AHRS1 not receiving backup GPS information.	The #1 AHRS is not receiving backup GPS information. The system should be serviced.
AHRS2 GPS – AHRS2 not receiving backup GPS information.	The #2 AHRS is not receiving backup GPS information. The system should be serviced.
AHRS1 GPS – AHRS1 operating exclusively in no-GPS mode.	The #1 AHRS is operating exclusively in no-GPS mode. The system should be serviced.
AHRS2 GPS – AHRS2 operating exclusively in no-GPS mode.	The #2 AHRS is operating exclusively in no-GPS mode. The system should be serviced.
AHRS MAG DB – AHRS magnetic model database version mismatch.	The #1 AHRS and #2 AHRS magnetic model database versions do not match.
AHRS1 SRVC – AHRS1 Magnetic-field model needs update.	The #1 AHRS earth magnetic field model is out of date. Update magnetic field model when practical.
AHRS2 SRVC – AHRS2 Magnetic-field model needs update.	The #2 AHRS earth magnetic field model is out of date. Update magnetic field model when practical.
GEO LIMITS – AHRS1 too far North/South, no magnetic compass.	The aircraft is outside geographical limits for approved AHRS operation. Heading is flagged as invalid.
GEO LIMITS – AHRS2 too far North/South, no magnetic compass.	
GRS1 MANIFEST – GRS1 software mismatch, communication halted.	The #1 AHRS has incorrect software installed. The system should be serviced.
GRS2 MANIFEST – GRS2 software mismatch, communication halted.	The #2 AHRS has incorrect software installed. The system should be serviced.
AHRS1 SERVICE – AHRS1 needs service. Return unit for repair.	A failure has been detected in the #1 AHRS. The system should be serviced.
AHRS2 SERVICE – AHRS2 needs service. Return unit for repair.	A failure has been detected in the #2 AHRS. The system should be serviced.
AHRS1 CONFIG – AHRS1 config error. Config service req'd.	AHRS configuration settings do not match those of backup configuration memory. The system should be serviced.

Message	Comments
AHRS2 CONFIG – AHRS2 config error. Config service req'd.	AHRS configuration settings do not match those of backup configuration memory. The system should be serviced.
AHRS1 CAL – AHRS1 calibration version error. Srvc req'd.	The #1 AHRS calibration version error. The system should be serviced.
AHRS2 CAL – AHRS2 calibration version error. Srvc req'd.	The #2 AHRS calibration version error. The system should be serviced.

GMU 44 MESSAGE ADVISORIES

Message	Comments
HDG FAULT – AHRS1 magnetometer fault has occurred.	A fault has occurred in the #1 GMU 44. Heading is flagged as invalid. The AHRS uses GPS for backup mode operation. The system should be serviced.
HDG FAULT – AHRS2 magnetometer fault has occurred.	A fault has occurred in the #2 GMU 44. Heading is flagged as invalid. The AHRS uses GPS for backup mode operation. The system should be serviced.
MANIFEST – GMU1 software mismatch, communication halted.	The GMU 44 has incorrect software installed. The system should be serviced.
MANIFEST – GMU2 software mismatch, communication halted.	

GDL 59 MESSAGE ADVISORIES

Message	Comments
GDL59 CONFIG – GDL 59 config error. Config service req'd.	GDL 59 configuration settings do not match those of backup configuration memory. The system should be serviced.
GDL59 FAIL – GDL 59 has failed.	A failure has been detected in the GDL 59. The receiver is unavailable. The system should be serviced.
GDL59 SERVICE – GDL 59 needs service. Return unit for repair.	A failure has been detected in the GDL 59. The system should be serviced.

Message	Comments
GDL59 RTR FAIL – The GDL 59 router has failed.	A failure has been detected in the GDL 59 router. The system should be serviced.
REGISTER CONNEXT – Data services are inoperative, register w/ Connext.	The GDL 59 is not registered with Connext, or it's current registration data has failed authentication.
MANIFEST – GDL software mismatch, communication halted.	The GDL 59 has incorrect software installed. The system should be serviced.

GSR 56 MESSAGE ADVISORIES

Message	Comments
GSR1 FAIL – GSR1 has failed.	A failure has been detected in the #1 GSR 56. The system should be serviced.

GDL 69A MESSAGE ADVISORIES

Message	Comments
GDL69 CONFIG – GDL 69 config error. Config service req'd.	GDL 69 configuration settings do not match those of backup configuration memory. The system should be serviced.
GDL69 FAIL – GDL 69 has failed.	A failure has been detected in the GDL 69. The receiver is unavailable. The system should be serviced
GDL69 MANIFEST – GDL software mismatch, communication halted.	The GDL 69 has incorrect software installed. The system should be serviced.

GWX 68/70 MESSAGE ADVISORIES

Message	Comments
GWX CONFIG – GWX config error. Config service req'd.	GWX 68/70 configuration settings do not match those of the GDU configuration. The system should be serviced.
GWX FAIL – GWX is inoperative.	The GDU is not recieving status packet from the GWX 68/70 or the GWX 68/70 is reporting a fault. The GWX 68/70 radar system should be serviced.

Message	Comments
GWX SERVICE – GWX needs service. Return unit for repair.	A failure has been detected in the GWX 68/70. The GWX 68/70 may still be usable.
GWX MANIFEST – GWX software mismatch, communication halted.	The GWX 68/70 has incorrect software installed. The system should be serviced.
WX ALERT – Possible severe weather ahead.	Possible severe weather detected within +/- 10 degrees of the aircraft heading at a range of 80 to 320 nm.

GDC 74B/7400 MESSAGE ADVISORIES

Message	Comments
ADC1 ALT EC – ADC1 altitude error correction is unavailable.	GDC1 or GDC2 is reporting that the altitude error correction is unavailable.
ADC2 ALT EC – ADC2 altitude error correction is unavailable.	
ADC1 AS EC – ADC1 airspeed error correction is unavailable.	GDC1 or GDC2 is reporting that the airspeed error correction is unavailable.
ADC2 AS EC – ADC2 airspeed error correction is unavailable.	
ADC1 SERVICE – ADC1 needs service. Return unit for repair	The GDC1 and/or GDC2 self-test has detected a problem in the unit. The system should be serviced
ADC2 SERVICE – ADC1 needs service. Return unit for repair	
GDC1 MANIFEST – GDC1 software mismatch, communication halted.	The GDC has incorrect software installed. The system should be serviced.
GDC2 MANIFEST – GDC2 software mismatch, communication halted.	

GCU 477 MESSAGE ADVISORIES

Message	Comments
GCU CNFG – GCU Config error. Config service req'd.	GCU 477 configuration settings do not match those of backup configuration memory. The G1000 system should be serviced.

Message	Comments
GCU FAIL – GCU is inoperative.	A failure has been detected in the GCU 477. The GCU 477 is unavailable.
GCU1 MANIFEST – GCU software mismatch, communication halted.	The GCU 477 has incorrect software installed. The G1000 system should be serviced.
GCU KEYSTK – GCU [key name] Key is stuck.	A key is stuck on the GCU 477 bezel. Attempt to free the stuck key by pressing it several times. The G1000 system should be serviced if the problem persists.

GMC 710 MESSAGE ADVISORIES

Message	Comments
GMC CONFIG – GMC Config error. Config service req'd.	Error in the configuration of the GMC 710.
GMC FAIL – GMC is inoperative.	A failure has been detected in the GMC 710. The GMC 710 is unavailable.
GMC MANIFEST – GMC software mismatch. Communication halted.	The GMC 710 has incorrect software installed. The system should be serviced.
GMC KEYSTK – GMC [key name] Key is stuck.	A key is stuck on the GMC 710 bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists.

GTS 800/820/825/850/855/8000 MESSAGE ADVISORIES

Message	Comments
GTS CONFIG – GTS config error. Config service req'd.	The GTS and GDU have incompatible configurations. This alert is also set when the GTS has an invalid mode S address configured or the mode S address does not match both XPDR mode S addresses.
GTS MANIFEST – GTS software mismatch, communication halted.	The GTS has incorrect software installed. The system should be serviced.

GRA 5500 MESSAGE ADVISORIES

Message	Comments
GRA1 CONFIG – GRA1 config error. Config service req'd.	The GRA and GDU have incompatible configurations.
GRA1 SERVICE – GRA1 needs service. Return unit for repair	The GRA self-test has detected a problem in the unit. The system should be serviced.
GRA1 CAL – GRA1 calibration. Service req'd.	GRA1 has improper calibration. The system should be serviced.
GRA1 TEMP – GRA1 over temperature.	The system has detected an over temperature condition in GRA1.
GRA1 MANIFEST – GRA1 software mismatch, communication halted.	The GRA has incorrect software installed. The system should be serviced.

MISCELLANEOUS MESSAGE ADVISORIES

Message	Comments
FPL WPT LOCK – Flight plan waypoint is locked.	Upon power-up, the system detects that a stored flight plan waypoint is locked. This occurs when a navigation database update eliminates an obsolete waypoint. The flight plan cannot find the specified waypoint and flags this message. This can also occur with user waypoints in a flight plan that is deleted. Remove the waypoint from the flight plan if it no longer exists in any database, Or update the waypoint name/identifier to reflect the new information.
FPL WPT MOVE – Flight plan waypoint moved.	The system has detected that a waypoint coordinate has changed due to a new navigation database update. Verify that stored flight plans contain correct waypoint locations.

Message	Comments
TIMER EXPIRD – Timer has expired.	The system notifies the pilot that the timer has expired.
DB CHANGE – Database changed. Verify user modified procedures.	This occurs when a stored flight plan contains procedures that have been manually edited. This alert is issued only after an navigation database update. Verify that the user-modified procedures in stored flight plans are correct and up to date.
DB CHANGE – Database changed. Verify stored airways.	This occurs when a stored flight plan contains an airway that is no longer consistent with the navigation database. This alert is issued only after an navigation database update. Verify use of airways in stored flight plans and reload airways as needed.
LOCKED FPL – Cannot navigate locked flight plan.	This occurs when the pilot attempts to activate a stored flight plan that contains locked waypoint. Remove locked waypoint from flight plan. Update flight plan with current waypoint.
WPT ARRIVAL – Arriving at waypoint -[xxxx]	Arriving at waypoint [xxxx], where [xxxx] is the waypoint name.
STEEP TURN – Steep turn ahead.	A steep turn is 15 seconds ahead. Prepare to turn.
INSIDE ARSPC – Inside airspace.	The aircraft is inside the airspace.
ARSPC AHEAD – Airspace ahead less than 10 minutes.	Special use airspace is ahead of aircraft. The aircraft will penetrate the airspace within 10 minutes.
ARSPC NEAR – Airspace near and ahead.	Special use airspace is near and ahead of the aircraft position.
ARSPC NEAR – Airspace near – less than 2 nm.	Special use airspace is within 2 nm of the aircraft position.
APR INACTV – Approach is not active.	The system notifies the pilot that the loaded approach is not active. Activate approach when required.

Message	Comments
SLCT FREQ – Select appropriate frequency for approach.	The system notifies the pilot to load the approach frequency for the appropriate NAV receiver. Select the correct frequency for the approach.
SLCT NAV – Select NAV on CDI for approach.	The system notifies the pilot to set the CDI to the correct NAV receiver. Set the CDI to the correct NAV receiver.
PTK FAIL – Parallel track unavailable: bad geometry.	Bad parallel track geometry.
PTK FAIL – Parallel track unavailable: invalid leg type.	Invalid leg type for parallel offset.
PTK FAIL – Parallel track unavailable: past IAF.	IAF waypoint for parallel offset has been passed.
UNABLE V WPT – Can't reach current vertical waypoint.	The current vertical waypoint can not be reached within the maximum flight path angle and vertical speed constraints. The system automatically transitions to the next vertical waypoint.
VNV – Unavailable. Unsupported leg type in flight plan.	The lateral flight plan contains a procedure turn, vector, or other unsupported leg type prior to the active vertical waypoint. This prevents vertical guidance to the active vertical waypoint.
VNV – Unavailable. Excessive track angle error.	The current track angle error exceeds the limit, causing the vertical deviation to go invalid.
VNV – Unavailable. Excessive crosstrack error.	The current crosstrack exceeds the limit, causing vertical deviation to go invalid.
VNV – Unavailable. Parallel course selected.	A parallel course has been selected, causing the vertical deviation to go invalid.
TRAFFIC FAIL – Traffic device has failed.	The system is no longer receiving data from the traffic system. The traffic device should be serviced.

Message	Comments
NON WGS84 WPT – Do not use GPS for navigation to [xxxx]	The position of the selected waypoint [xxxx] is not calculated based on the WGS84 map reference datum and may be positioned in error as displayed. Do not use GPS to navigate to the selected non-WGS84 waypoint.
STRMSCP FAIL – Stormscope has failed.	Stormscope has failed. The G1000™ system should be serviced.
FAILED PATH – A data path has failed.	A data path connected to the GDU or the GIA 63/W has failed.
MAG VAR – Large magnetic variance. Verify all course angles.	The GDU's internal model cannot determine the exact magnetic variance for geographic locations near the magnetic poles. Displayed magnetic course angles may differ from the actual magnetic heading by more than 2°.
SVT – SVT DISABLED: Out of available terrain region.	Synthetic Vision is disabled because the aircraft is not within the boundaries of the installed terrain database.
SVT – SVT DISABLED: Terrain DB resolution too low.	Synthetic Vision is disabled because a terrain database of sufficient resolution (9 arc-second or better) is not currently installed.
SCHEDULER [#] – <message>.	Message criteria entered by the user.
USER MAG VAR – User magnetic variation is active.	User magnetic variation mode was selected during previous operation and is still active (checked at power-up.)
CHECK CRS – Database course for LOC1 / [LOC ID] is [CRS]°.	Selected course for LOC1 differs from published localizer course by more than 10 degrees.
CHECK CRS – Database course for LOC2 / [LOC ID] is [CRS]°.	Selected course for LOC2 differs from published localizer course by more than 10 degrees.
[PFD1, PFD2, or MFD1] CARD 1 REM – Card 1 was removed. Reinsert card.	The SD card was removed from the top card slot of the specified PFD or MFD. The SD card needs to be reinserted.
[PFD1, PFD2, or MFD1] CARD 2 REM – Card 2 was removed. Reinsert card.	The SD card was removed from the bottom card slot of the specified PFD or MFD. The SD card needs to be reinserted.

Message	Comments
[PFD1, PFD2, or MFD1] CARD 1 ERR – Card 1 is invalid.	The SD card in the top card slot of the specified PFD or MFD contains invalid data.
[PFD1, PFD2, or MFD1] CARD 2 ERR – Card 2 is invalid.	The SD card in the bottom card slot of the specified PFD or MFD contains invalid data.
FPL TRUNC – Flight plan has been truncated.	This occurs when a newly installed navigation database eliminates an obsolete approach or arrival used by a stored flight plan. The obsolete procedure is removed from the flight plan. Update flight plan with current arrival or approach.
HOLD EXPIRED – Holding EFC time expired.	Expect Further Clearance (EFC) time has expired for the User Defined Hold.
BARO MISMATCH – Correct baro mismatch for VNAV guidance.	Altimeter setting is not the same on PFD1 and PFD2. Synchronize settings for VNAV guidance.
TRN AUD FAIL – Trn Awareness audio source unavailable.	The audio source for terrain awareness is offline. Check GIA1 or GIA 2.
TERRAIN AUD CFG – Trn Awareness audio config error. Service req'd.	Terrain audio alerts are not configured properly. The system should be serviced
TERRAIN DISABLED – Terrain Awareness DB resolution too low.	TAWS is disabled because a terrain database of sufficient resolution (9 arc-second or better) is not currently installed.

FLIGHT PLAN IMPORT/EXPORT MESSAGES

In some circumstances, some messages may appear in conjunction with others.

Flight Plan Import/Export Results	Description
'Flight plan successfully imported.'	A flight plan file stored on the SD card was successfully imported as a stored flight plan.
'File contained user waypoints only. User waypoints imported successfully. No stored flight plan data was modified.'	The file stored on the SD card did not contain a flight plan, only user waypoints. These waypoints have been saved to the system user waypoints. No flight plans stored in the system have been modified.
'No flight plan files found to import.'	The SD card contains no flight plan data.

Flight Plan Import/Export Results	Description
'Flight plan import failed.'	Flight plan data was not successfully imported from the SD card.
'Flight plan partially imported.'	Some flight plan waypoints were successfully imported from the SD card, however others had errors and were not imported. A partial stored flight plan now exists in the system.
'File contained user waypoints only.'	The file stored on the SD card did not contain a flight plan, only user waypoints. One or more of these waypoints did not import successfully.
'Too many points. Flight plan truncated.'	The flight plan on the SD card contains more waypoints than the system can support. The flight plan was imported with as many waypoints as possible.
'Some waypoints not loaded. Waypoints locked.'	The flight plan on the SD card contains one or more waypoints that the system cannot find in the navigation database. The flight plan has been imported, but must be edited within the system before it can be activated for use.
'User waypoint database full. Not all loaded.'	The flight plan file on the SD card contains user waypoints. The quantity of stored user waypoints has exceeded system capacity, therefore not all the user waypoints on the SD card have been imported. Any flight plan user waypoints that were not imported are locked in the flight plan. The flight plan must be edited within the system before it can be activated for use.
'One or more user waypoints renamed.'	One or more imported user waypoints were renamed when imported due to naming conflicts with waypoints already existing in the system.
'Flight plan successfully exported.'	The stored flight plan was successfully exported to the SD card.
'Flight plan export failed.'	The stored flight plan was not successfully exported to the SD card. The SD card may not have sufficient available memory or the card may have been removed prematurely.

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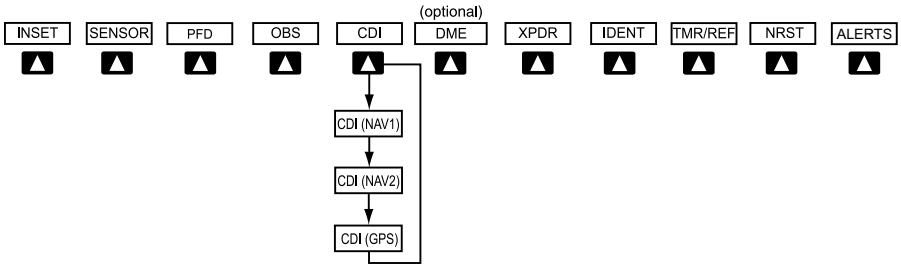
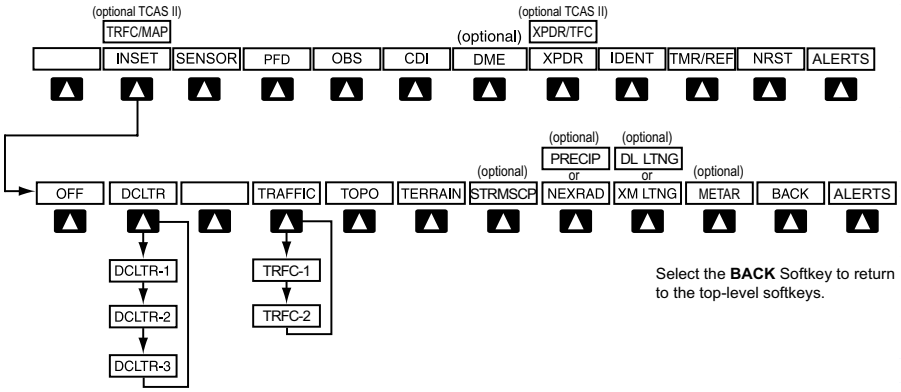
APPENDIX

PFD SOFTKEY MAP



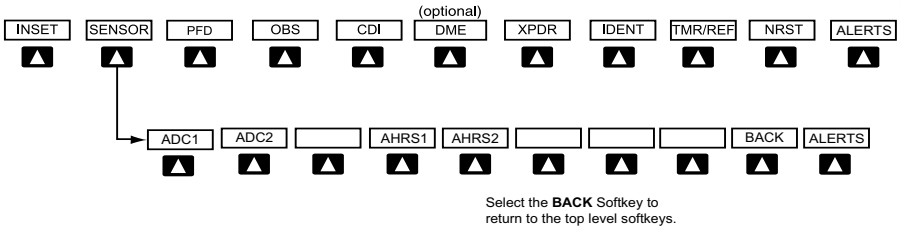
Top Level PFD Softkeys



Inset Map Softkeys

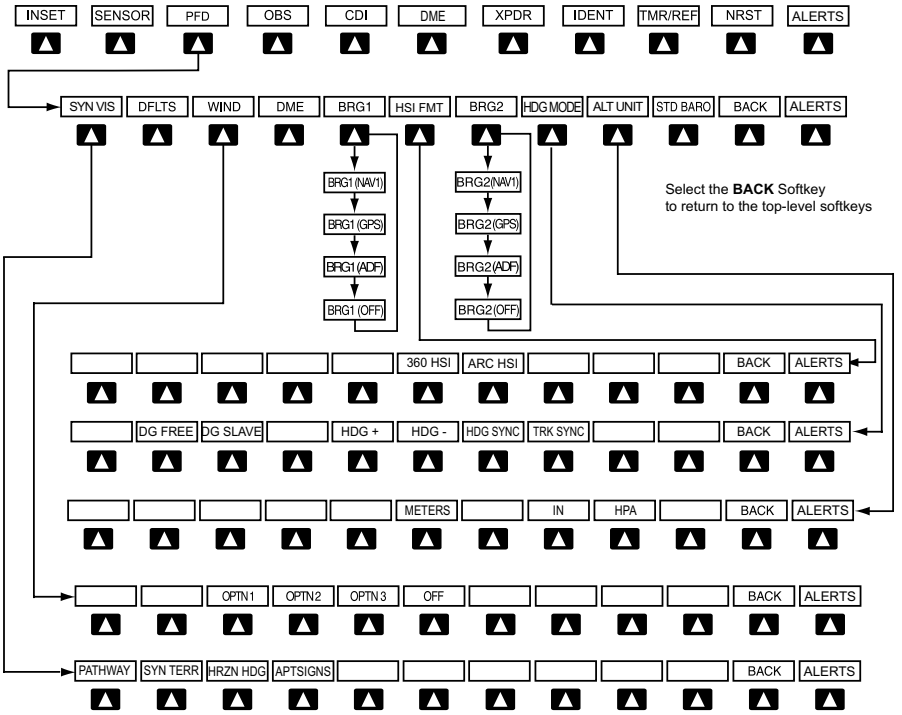
Level 1	Level 2	Description
INSET or TRFC/MAP		Pressing the **INSET** Softkey Displays Inset Map in the PFD lower left corner. The **TRFC/MAP** Softkey is displayed when the TCAS II option is installed. Pressing the **TRFC/MAP** Softkey displays the Inset Map showing Traffic Map Page.
	OFF	Removes Inset Map

Level 1	Level 2	Description
	DCLTR (3)	Selects desired amount of map detail; cycles through declutter levels: DCLTR (No Declutter): All map features visible DCLTR-1: Declutters land data DCLTR-2: Declutters land and SUA data DCLTR-3: Removes everything except the active flight plan
	WX LGND	Displays icon and age on the Inset Map for the selected weather products (optional)
	TRAFFIC	Displays traffic information on Inset Map
	TOPO	Displays topographical data (e.g., coastlines, terrain, rivers, lakes) and elevation scale on Inset Map
	TERRAIN	Displays terrain information on Inset Map
	STRMSCP	Press to display the Stormscope lightning data on the Inset Map (within a 200 nm radius of the aircraft)
	NEXRAD **or** **PRECIP**	Displays NEXRAD weather and coverage information on Inset Map (optional) Displays Connext Weather precipitation on Inset Map (optional)
	XM LTNG **or** **DL LTNG**	Displays SiriusXM lightning information on Inset Map (optional) Displays Connext Weather lightning information on Inset Map (optional)
	METAR	Displays METAR flags on airport symbols shown on the Inset Map (optional)



Sensor Softkeys

Level 1	Level 2	Description
SENSOR		Displays softkeys for selecting the #1 and #2 AHRS and Air Data Computers
	ADC1	Selects the #1 Air Data Computer
	ADC2	Selects the #2 Air Data Computer
	AHRS1	Selects the #1 AHRS
	AHRS2	Selects the #2 AHRS

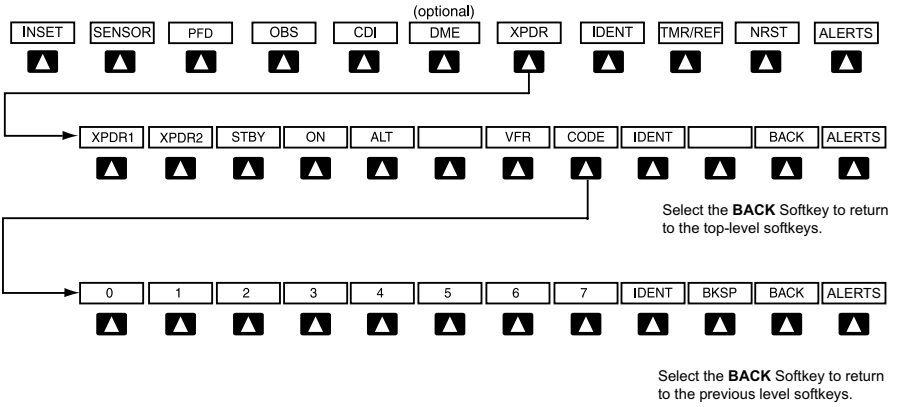


PFD Configuration Softkeys

Level 1	Level 2	Level 3	Description
PFD			Displays second-level softkeys for additional PFD configurations
	SYN VIS		Displays the softkeys for enabling or disabling Synthetic Vision features
		PATHWAY	Displays rectangular boxes representing the horizontal and vertical flight path of the active flight plan
		SYN TERR	Enables synthetic terrain depiction
		HRZN HDG	Displays compass heading along the Zero-Pitch line

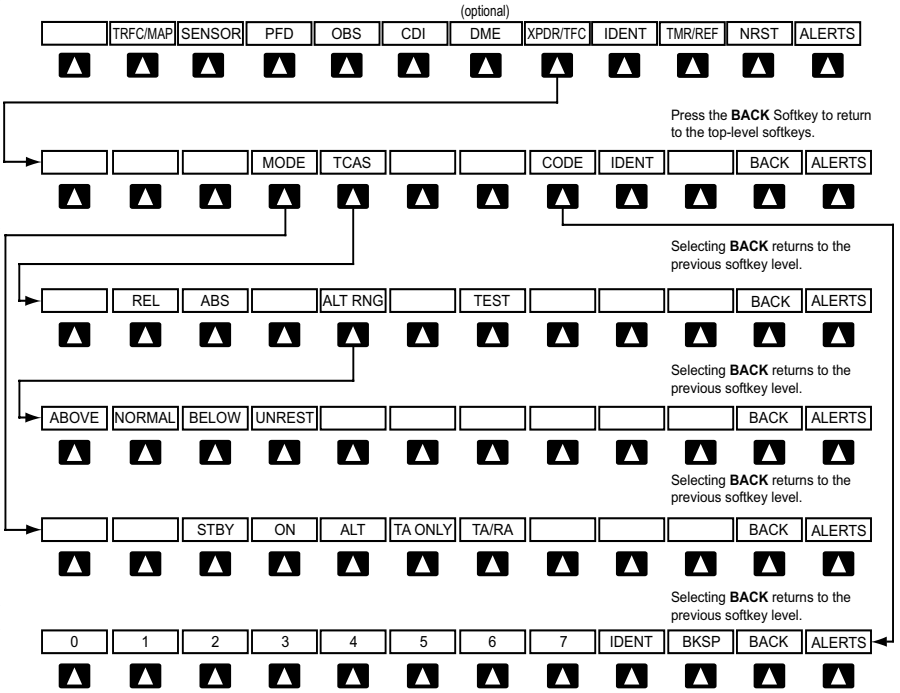
Level 1	Level 2	Level 3	Description
		APTSIGNS	Displays position markers for airports within approximately 15 nm of the current aircraft position. Airport identifiers are displayed when the airport is within approximately 9 nm.
	DFLTS		Resets PFD to default settings, including changing units to standard
	WIND		Displays softkeys to select wind data parameters
		OPTN 1	Wind direction arrow and speed
		OPTN 2	Wind direction arrow with digital direction and speed
		OPTN 3	Longitudinal and lateral components
		OFF	Information not displayed
	DME		Displays the DME Information Window
	BRG1		Cycles the Bearing 1 Information Window through NAV1 or GPS/waypoint identifier and GPS-derived distance information, and ADF/frequency.
	HSI FRMT		Displays the HSI formatting softkeys
		360 HSI	Displays the HSI in a 360 degree format
		ARC HSI	Displays the HSI in an arc format
	BRG2		Cycles the Bearing 2 Information Window through NAV2 or GPS/waypoint identifier and GPS-derived distance information, and ADF/frequency.
	HDG MODE		Displays softkeys to select DG Modes (GRS 7800 installations only)
		DG FREE	Allows the DG to enter FREE mode

Level 1	Level 2	Level 3	Description
		DG SLAVE	Slaves the DG to the AHRS.
		HDG -	Slews heading counterclockwise
		HDG +	Slews heading clockwise
		HDG SYNC	Synchronizes heading to the selected heading
		TRK SYNC	Synchronizes heading to the current track
	ALT UNIT		Displays softkeys for setting the altimeter and BARO settings to metric units
		METERS	When enabled, displays altimeter in meters
		IN	Press to display the BARO setting as inches of mercury
		HPA	Press to display the BARO setting as hectopacals
	STD BARO		Sets barometric pressure to 29.92 in Hg (1013 hPa)



Transponder Softkeys

Level 1	Level 2	Level 3	Description
XPDR			Displays transponder mode selection softkeys
	XPDR1		Selects the #1 transponder as active
	XPDR2		Selects the #2 transponder as active
	STBY		Selects Standby Mode (transponder does not reply to any interrogations)
	ON		Selects Mode A (transponder replies to interrogations)
	ALT		Selects Mode C – Altitude Reporting Mode (transponder replies to identification and altitude interrogations)
	VFR		Automatically enters the VFR code (1200 in the U.S.A. only)
	CODE		Displays transponder code selection softkeys 0-7
		0 — 7	Use numbers to enter code
		BKSP	Removes numbers entered, one at a time
	IDENT		Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen
TMR/REF			Displays Timer/References Window
NRST			Displays Nearest Airports Window
ALERTS			Displays Alerts Window



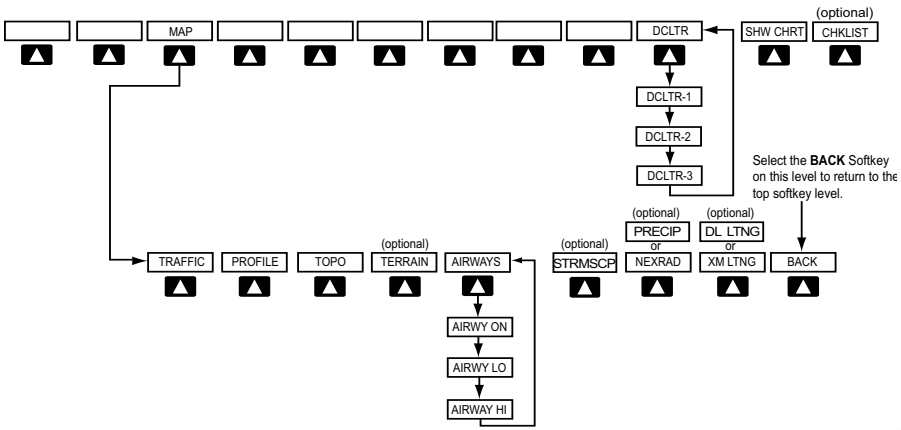
Transponder/Traffic Softkeys with TCAS II Option

Level 1	Level 2	Level 3	Level 4	Description
XPDR/TFC				Displays the transponder and TCAS II selection softkeys
	MODE			Displays transponder mode selection softkeys
		STBY		Selects transponder Standby Mode (transponder does not reply to any interrogations). When the transponder is set to standby, the TCAS II system is also set to standby.

Level 1	Level 2	Level 3	Level 4	Description
		ON		Activates transponder (transponder replies to identification interrogations). When the transponder is set to ON, the TCAS II system is set to standby.
		ALT		Altitude Reporting Mode (transponder replies to identification and altitude interrogations). When the transponder is set to ALT, the TCAS II system is set to standby.
		TA ONLY		Activates the TCAS II system in TA Only Mode and set the transponder to ALT
		TA/RA		Activates the TCAS II system in TA/RA Mode and sets the transponder to ALT
		BACK		Returns to the previous softkey level
	TCAS			Displays the TCAS control softkeys
		REL		Displays intruder altitude as altitude relative to own aircraft altitude
		ABS		Displays intruder MSL altitude
		ALT RNG		Displays the altitude display range softkeys
			ABOVE	Displays non-threat traffic from 9900 feet above the aircraft to 2700 feet below the aircraft. Typically used during climb phase of flight.

Level 1	Level 2	Level 3	Level 4	Description
			NORMAL	Displays non-threat traffic from 2700 feet above the aircraft to 2700 feet below the aircraft. Typically used during enroute phase of flight.
			BELOW	Displays non-threat traffic from 2700 feet above the aircraft to 9900 feet below the aircraft. Typically used during descent phase of flight.
			UNREST	All traffic is displayed
		TEST		Activates Test Mode and displays test intruder symbols
		BACK		Returns to the previous softkey level
	CODE			Displays transponder code selection softkeys 0-7
		0 — 7		Use numbers to enter code
		IDENT		Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen
		BKSP		Removes numbers entered, one at a time
IDENT				Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen
TMR/REF				Displays Timer/References Window
NRST				Displays Nearest Airports Window
ALERTS				Displays Alerts Window

MFD NAVIGATION PAGE SOFTKEY MAP



MFD Softkeys

Level 1	Level 2	Description
MAP		Enables second-level Navigation Map softkeys
	TRAFFIC	Displays traffic information on Navigation Map
	TOPO	Displays topographical data (e.g., coastlines, terrain, rivers, lakes) and elevation scale on Navigation Map
	TERRAIN	Displays terrain information on Navigation Map
	AIRWAYS	Displays airways on the map; cycles through the following: AIRWAYS: No airways are displayed AIRWY ON: All airways are displayed AIRWY LO: Only low altitude airways are displayed AIRWY HI: Only high altitude airways are displayed
	STRMSCP	Displays Stormscope weather and coverage information on Navigation Map (optional feature)
	NEXRAD **or** **PRECIP**	Displays NEXRAD weather and coverage information on the Navigation Map (optional) Displays Connext Weather precipitation on the Navigation Map (optional)

Level 1	Level 2	Description
	XM LTNG **or** **DL LTNG**	Displays SiriusXM lightning information on the Navigation Map (optional) Displays Connext Weather lightning information on the Navigation Map (optional)
	BACK	Returns to top-level softkeys
DCLTR (3)		Selects desired amount of map detail; cycles through declutter levels: DCLTR (No Declutter): All map features visible DCLTR-1: Declutters land data DCLTR-2: Declutters land and SUA data DCLTR-3: Removes everything except the active flight plan
SHW CHRT		When available, displays optional airport and terminal procedure charts
CHKLIST		When available, displays optional checklists

LOADING UPDATED DATABASES

Database information is obtained from third party sources. Inaccuracies in the data may be discovered from time to time. Garmin communicates this information by issuing a Database Alert. These notifications are available on http://fly.garmin.com.

Garmin requests the flight crew report any observed discrepancies related to database information. These discrepancies could come in the form of an incorrect procedure; incorrectly identified terrain, obstacles and fixes; or any other displayed item used for navigation or communication in the air or on the ground. Go to http://fly.garmin.com and select "Aviation Data Error Report".

CAUTION: *Never disconnect power to the system when loading a database. Power interuption during the database loading process could result in maintenance being required to reboot the system.*

NOTE: *When loading database updates, the 'DB Mismatch' message will be displayed until database synchronization is complete, followed by turning system power off, then on. Synchronization can be monitored on the AUX-SYSTEM STATUS Page.*

In some cases it may be necessary to obtain an unlock code from Garmin in order to make the database product functional. It may also be necessary to have the system configured by a Garmin authorized service facility in order to use some database features.

If an error occurs during synchronization, an error message will be displayed, followed by the affected display in the Sync Status section of the Database Window. If synchronization completes on one display, but an error occurs on another, the error message will be displayed with the affected diaplays listed after it. When an error message is displayed, the problem must be corrected before synchronization can be completed. A power cycle is required to restart synchronization when 'Card Full' or 'Err' is shown.

Error Message	Description
Canceled	Database synchronization has been canceled by removing the bottom SD card in display being updated
Card Full	SD card does not contain sufficient memory
Err	Displayed for all other errors that may cause the synchronization process to be halted
Timeout	System timed-out prior to the database transfer completing

Loading Garmin Database Updates

1) With system power OFF, remove the MFD database card from the bottom card slot of the MFD.
2) Update the Garmin databases on the MFD card.
3) Insert the MFD database card into the bottom card slot of the MFD.
4) Apply power to the system, check that the databases are initialized and displayed on the power-up screen. When updating the terrain and FliteCharts databases, a 'Verifying' message may be seen. If this message is present, wait for the system to finish loading before proceeding to step 5.
5) Acknowledge the Power-up Page agreement by pressing the **ENT** Key or the right most softkey.
6) Turn the large **FMS** Knob to select the AUX Page group on the MFD.
7) Turn the small **FMS** Knob to select the System Status Page.
8) Monitor the Sync Status in the Database Window. Wait for all databases to complete synching, indicated by 'Complete' being displayed.

9) Remove and reapply power to the system.
10) Turn the large **FMS** Knob to select the AUX Page group on the MFD.
11) Turn the small **FMS** Knob to select the System Status Page.
12) Press the Display Database Selection Softkey to show database information for each display (**MFD1 DB**, **PFD1 DB, PFD2 DB**). Verify the correct database cycle information is shown for each database for each display.

Loading the Jeppesen Navigation Database as the Active Navigation Database

NOTE: *Loading the Jeppesen navigation database as the active database prior to its effective date will result in the expiration date on the power-up screen and the effective date on the AUX-System Status Page being displayed in yellow.*

NOTE: *After the navigation database is loaded or copied, the top SD card may be removed.*

1) With the system OFF, insert the SD card containing the new navigation database version into the top card slot of the display (PFD1, PFD2 or MFD) to be updated (label of SD card facing left).
2) Turn the system ON. A prompt is displayed in the upper left corner of the display:
3) Press the **NO** Softkey to proceed to loading the active database.
4) A prompt similar to the following is displayed. Press the **YES** Softkey to update the active navigation database.
5) After the update completes, the display starts in normal mode.
6) Turn the system OFF and remove the SD card from the top card slot.
7) Repeat steps 1 through 6 for the other displays (PFD1, PFD2 or MFD).
8) Apply power to the system and press the **ENT** Key to acknowledge the startup screen.
9) Turn the large **FMS** Knob to select the AUX Page group on the MFD.
10) Turn the small **FMS** Knob to select the System Status Page.
11) Press the Display Database Selection Softkey to show active navigation database information for each display (**MFD1 DB**, **PFD1 DB, PFD2 DB**). Verify the correct active navigation database cycle information is shown for each display.

Loading the Jeppesen Navigation Database as the Standby Navigation Database

NOTE: *After the navigation database is loaded or copied, the top SD card may be removed.*

1) With the system OFF, insert the SD card containing the new navigation database version into the top card slot of the MFD.

2) Verify that an SD card is inserted in the bottom slot of each PFD and the MFD.

3) Turn the system ON. A prompt is displayed.

4) Press the **YES** Softkey. The navigation database is copied to the SD card in the bottom card slot of the MFD.

5) After the navigation database files are copied to the bottom SD card, press any key to continue, as instructed.

7) Again, press any key to continue as instructed on the display.

8) Press the **NO** Softkey. The display now starts in normal mode. Since the database effective date is not yet valid, it should not be loaded as the active database. The display now starts in normal mode. Do not remove power while the display is starting.

9) Press the **ENT** Key to acknowledge the startup screen.

10) Turn the large **FMS** Knob to select the AUX Page group on the MFD.

11) Turn the small **FMS** Knob to select the System Status Page.

12) The new database is copied to the SD card in the bottom card slot of each PFD. Progress can be monitored in the SYNC STATUS field. When copying is finished, 'Complete' is displayed.

13) Turn system power OFF.

14) Remove the SD card from the top card slot of the MFD.

15) Turn system power ON.

16) Press the **ENT** Key to acknowledge the startup screen.

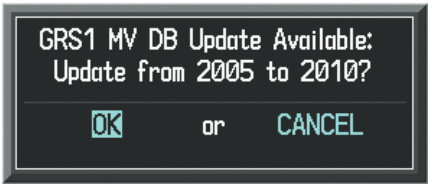
17) Turn the large **FMS** Knob to select the AUX Page group on the MFD.

18) Turn the small **FMS** Knob to select the System Status Page.

19) Press the Display Database Selection Softkey to show standby navigation database information for each display (**MFD1 DB**, **PFD1 DB, PFD2 DB**). Verify the correct standby navigation database cycle information is shown for each display.

Magnetic Field Variation Database Update

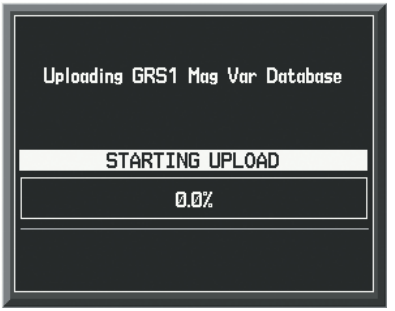
At startup, the system compares this version of the MV DB with that presently being used by each AHRS (GRS1 and GRS2). If the system determines the MV DB needs to be updated, a prompt is displayed on the Navigation Map Page, as shown in the following figure. Note, in the following example, GRS1 is the first AHRS to indicate an update is available. In actuality, this is dependent on which AHRS is the first to report status to the system. GRS2 may be displayed before GRS1. The order is not important, only that both AHRS be updated.



GRS1 Magnetic Field Variation Database Update Prompt

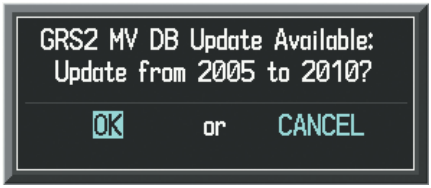
Loading the magnetic field variation database update:

1) With 'OK' highlighted, as shown in the previous figure, press the **ENT** Key on the MFD. A progress monitor is displayed as shown in the following figure.



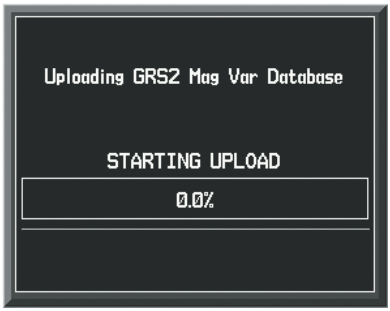
Uploading Database to GRS1

2) When the upload is complete, the prompt for the next GRS upload is displayed, as seen in the following figure.



GRS2 Magnetic Field Variation Database Update Prompt

3) With 'OK' highlighted, press the **ENT** Key on the MFD. A progress monitor is displayed as shown in the following figure. When the upload is complete, the system is ready for use.



Uploading Database to GRS2

Blank Page

A

Access code 69
Activate a flight plan 14
Active Channel 85
Active database 140
Active Navigation Database 140
AC-U-KWIK 68
ADF 5, 6, 131
Advisory alerts 93
AHRS 114, 115, 116, 118, 119, 142
Air Data Computer 94
Airport Directory 68
Airport Signs 65, 66
Airways 137
Alert messages 117
ALT 55
Altitude mode 55
Altitude volume 55
Antenna stabilization 63
Antenna tilt 61
AOPA 68
AP 95
Attitude & Heading Reference System 94
Audio panel controls
NAV1, NAV2 6

B

Barometric Altitude Minimums 3
Barometric pressure 132
Bearing line 61, 62

C

CDI 1, 2, 6, 122
Cell 39, 40
Cell mode 40
Channel Presets 86
ChartView 66, 67
Code selection softkeys 5
COM 6

D

DB Mismatch 138
Declutter 128, 138
Direct-to 13
DME 5, 6

E

Edit a flight plan 30
ESP 89, 90

F

FD 95
Flight Director 9
Flight path marker 65
FliteCharts® 66, 67
Frequency Transfer 6

G

Gain 62

H

HF 6
Horizon heading 65
Horizontal scan 62

I

Inhibit 60
Inhibit TAWS 60
Inset Map 127, 128
IOI 96, 97, 100
Iridium satellite network 69, 70, 74

J

Jeppesen 67

L

Level Mode 90
Lightning 39, 40, 128
Low speed data 69, 70

M

Magnetic Field Variation Database 142, 143
Map panning 41
Message advisories 103, 105, 108, 114, 116, 118, 119, 120
MET 95
METAR 41
Minimums 102
MISCOMP 94
Mistrim 95
Multi Function Display (MFD) Softkeys 137
MV DB 142

N

NAV 6
NAV1 2, 6
NAV2 6
Navigation database 15, 16, 125
NEXRAD 41, 128, 137
NEXRAD Softkey 49

O

OBS 2
Obstacles 108, 110
Overspeed Protection 10

P

Pathways 65, 66
PIREP 52
PIT 94
Predefined message 77, 78

R

Register 70
Resolution Advisory 53
ROC 96, 100

S

SafeTaxi® 66
SBAS 10, 34, 59, 110, 111
Sector scan 62
Sensor 94
SiriusXM lightning 128, 138
STAB 63
Standby 61
Standby Navigation Database 107, 141
Store Flight Plan 30
Stormscope lightning data 39, 40, 128
Strike 39
Strike mode 40
SVT 65, 123
SVT Terrain 65
Synchronization 139
SYNC Status 141
Synthetic Vision System 65
System ID 69

T

TA 102
TAF 41, 51
TAS 54, 55, 114
TAWS 57–60, 96–99, 101
TAWS-B 57, 58
TCAS II 5, 6, 55, 56, 127, 134, 135
TCAS System Test Passed 102, 103
Telephone 70
Terrain 57, 58, 96, 97, 99, 100, 108, 128, 137
Text message 76, 77, 79
Text messaging 75

Tilt line 61
Timer 121
Topographical data 128, 137
Traffic 39, 54, 56, 128, 137
Traffic advisory 54
Traffic Advisory (TA) 102, 103
Traffic map page 54, 55, 56
Transponder 5, 133, 134, 135, 136

V

Vertical speed guidance 16
Vertical track 102
VNV 13, 122
Vspeed 3

W

WATCH 63
Waypoint Selection Submenu 24
Weather Attenuated Color Highlight 63
Weather data link page 41
Weather radar 60
Wi-Fi 82, 83, 84, 85
Wind data 131
Winds Aloft 52

Blank Page

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